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MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 61
No. 22

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

In This Issue:

Wealth in the Utilization of Wastes
in the South.

The Question of Cotton-Growing
Abroad.

Industrial and Commercial Advance-
ment in South Carolina's Capital
City.

Power Development at Tallulah
Falls.

Alphabetical Index, Page 154.

Classified Index, Pages 148 to 153.

Classified Opportunities, Pages 98 and 99.

BALTIMORE, JUNE 6, 1912

CLINCHFIELD COAL

CLEAN



LUMPY

"NEVER SHORT OF CARS"

MINED BY
Clinchfield Coal Corporation
DANTE, VA.

SOLD BY
Clinchfield Fuel Company
SPARTANBURG, S. C.

PERFORATED METALS FOR ALL USES

You will find our prices and goods "RIGHT"
Send complete specifications.
Send for Metal sample plate **Erdle Perforating Co., Rochester, N. Y.**

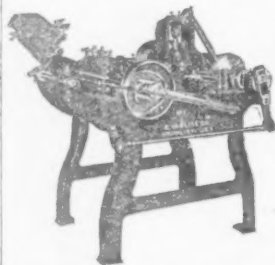
POWER PLANT REPAIRS

Engines, Boilers and Pumps Repaired
Cylinders Bored Without Dismantling
WE ALSO BRAZE BROKEN CASTINGS

CORRESPONDENCE SOLICITED

THE STRICKLAND MACHINE CO.
RICHMOND, VA.

Tin Can—Tin Box and Metal Package Machinery



Complete equipments for the economical production of Open Top and Packers' Cans for fruits, vegetables, fish, meats, soups, condensed milk, etc.; also for paint and varnish cans, petroleum and alcohol cans, baking powder and spice cans, lard pails, butter tins, tin boxes and packages of every description, round, square, oval and oblong. Send samples, stating requirements.

On request, Can Machinery Catalogue 147.

E. W. BLISS CO.

4 Adams St., Brooklyn, N. Y.

"BLISS" No. 1 Automatic Lock
Seam Body Maker.

Representatives for Chicago and Vicinity: Stiles-Morse Co., 562 Washington Boulevard, Chicago, Ill.

SOUTHERN WIRE & IRON MFG. CO.

DALLAS, TEXAS

Elevator Enclosures, Iron Grilles, Fire Escapes, Counter and Balcony Railings, Iron and Wire Guards, Wire Signs.



"Ladies Friend" Water Power Washer

A Positive Reliable Machine—The Most Simple one Made.
Has No Gears—No Complicated Parts—Has but One Valve—
Requires No Oiling—A Signed Guarantee with each Machine.

Write for Particulars—A Good Proposition for the Dealer or Jobber.

The D. L. Bates & Bro. Co. Dayton, Ohio



SYRACUSE Ash or Coal Barrows

Strong, well balanced, convenient;
tubular steel frame; extra heavy
steel wheel; legs provided with
renewable steel shoes.

THREE SIZES

No. 52, 6 cubic feet, No. 54, 8 cubic feet;
No. 55, 10 cubic feet.

SYRACUSE CHILLED PLOW CO.
SYRACUSE, N. Y.

"Walls" Everlasting Oilers

Our
Specialties

Include Oil Cans,
Fillers, Torches, Hand
Lamps, Ice Cans, Bells,
Gongs, Belt Fasteners, etc.
These goods are warranted of
the greatest possible durability,
and the best obtainable quality.

Ask for Catalogue.

The P. Wall Mfg. Co.

Allegheny, Pa.



of Brazed Steel, specially designed
for Strength. Every joint brazed
with Hard Spelter. Red Heat
or the roughest usage will
not cause a leak.

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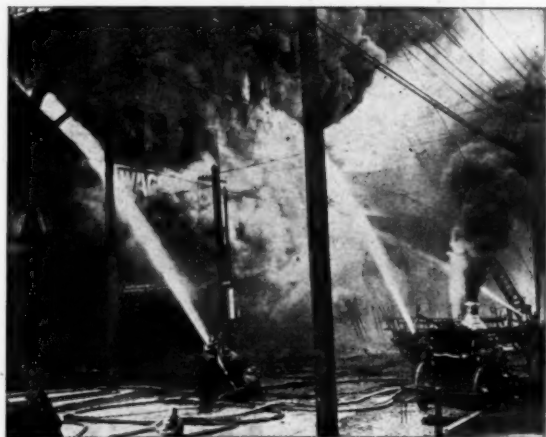
T
H

G

Plan



This Bad Loss Could Have Been Prevented



The tire storage warehouse of the Revere Rubber Co., Providence, R. I., was completely destroyed by fire with a loss of about \$600,000. One fireman was killed and several others injured. It was only with the greatest difficulty that the fire was prevented from spreading into an immense lumber yard next door.

This is said to be the only building owned by the Revere Rubber Co. which was not equipped with automatic sprinklers. It is a well known fact that, catching a fire as they do at the start, the sprinklers put it out before it has a chance to become dangerous, and hence avoid all liability of disastrous fires. In addition to this they command such respect from the insurance interests that rates on sprinklered buildings are frequently less than half what they are on the same type of building without sprinklers. This saving pays for the equipment in a very short time and then becomes a permanent dividend.

The surest and most satisfactory fire protection possible is that furnished by us in an equipment of

GRINNELL

AUTOMATIC SPRINKLERS

Our new book *AUTOMATIC FIRE PROTECTION* is full of information about sprinkler protection. It shows the How and the Why. Have you asked for your copy?

In addition to manufacturing and installing Grinnell Automatic Sprinkler Systems, we make a specialty of Steam and Hot Water Heating, and Power Piping Systems.

GENERAL FIRE EXTINGUISHER CO.

EXECUTIVE OFFICES: PROVIDENCE, R. I.

Southern Department: ATLANTA, GA.

Plants, Warehouses, and Agencies in All Principal Cities of the United States and Canada.



40-83

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QUICK DELIVERIES

CARBON

Standard Mill Type All Specials

DRAWN WIRE MAZDA

100-125 Volts

Regular Type 25, 40, 60, 100, 150, 250 Watts.
Round Bulb 25, 40, 60, 400, 500 Watts.

200-250 Volts

Regular Type 40, 60, 100, 150, 250 Watts.
Round Bulb 40, 60, 500 Watts.

FLASHLIGHT, MINIATURE, SIGN AND STREET SERIES

GEM ALL TYPES TANTALUM

We have a special proposition for Cotton Mills and other industrial plants. Get it. Your plant is not modern without modern illumination.

THE FOSTORIA INCANDESCENT LAMP WORKS

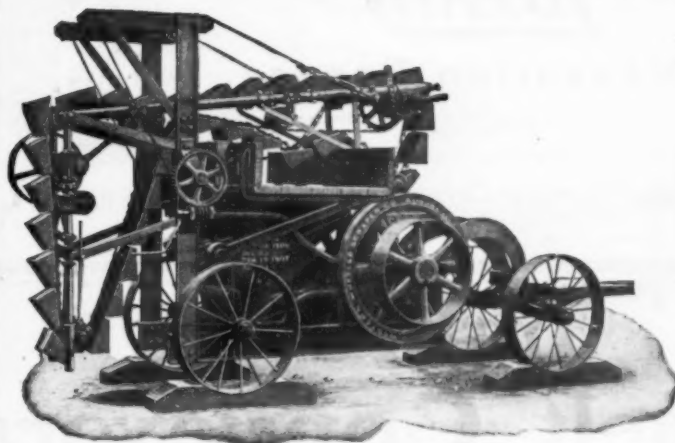
OF GENERAL ELECTRIC CO.

Home Office and Works, Fostoria, Ohio

Southern Office, 73 South Pryor Street, Atlanta, Georgia

SOUTHERN AGENCIES

Nashville Machine Co., Nashville, Tenn. Perry-Mann Elec. Co., Columbia, S. C.
Shores-Osborne Elec. Co., Spartanburg, S. C. W. M. Reay, Norfolk, Virginia.
H. M. Moses Elec. Co., Knoxville, Tenn. Summers-Parrott Hdwe. Co., Johnson City, Tenn.
Ingram-Graham Elec. Co., Jacksonville, Fla. Watt Hardware Co., Thomasville, Ga., and Branches.
Norton Hdwe. Co., Norton, Va. Fitzhugh-Perkins Co., Dallas, Texas.
Deshon & Davison, Tulsa, Okla.



AFTER ALL—

It's poor economy to buy a cheap crusher.

AURORA ROCK CRUSHERS

are not cheap crushers in any way. They may cost you more than others, but are worth it.

Material and workmanship are the very best, nothing cheap used. This makes the first cost more, but their durability and efficiency make them the cheapest in the end.

There are many "Reasons Why" the Auroras are just the crushers you want. Let us show you.

WRITE FOR PRINTED MATTER TODAY

WESTERN WHEELED SCRAPER CO.

AURORA, ILLINOIS

EARTH AND STONE HANDLING MACHINERY

SPECIALTIES FOR POWER HOUSE LUBRICATION

TURBOIL

TRADE MARK

FOR

TURBINE LUBRICATION



GAS CYLINDER OIL

TRADE MARK

FOR HIGH-DUTY GAS ENGINES USING
NATURAL, PRODUCER OR FURNACE GAS

GET THE ORIGINAL AND SUCCESSFUL BRAND

NEVER FAILED

BORNE, SCRYMSER COMPANY

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Measuring Tapes

In Accuracy, Durability and Workmanship
are Unequaled.

"With Instantaneous Readings."

THE LUFKIN RULE CO.

NEW YORK

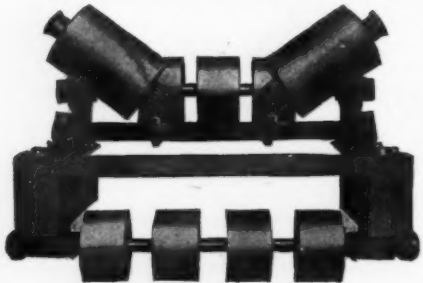
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SAGINAW, MICH., U. S. A.

WINDSOR, ONT.



Improved Belt Conveyors



We manufacture improved belt conveyors of several styles, troughing the belt or running it flat, as conditions may warrant. These conveyors are economical of power, simple in design, capable of running 24 hours per day, and require little time or attention from anyone. There's no harm in writing us.

H. W. Caldwell & Son Co.

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NEW YORK, Fulton Bldg., Hudson Terminal 50 Church St.



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FOR HANDLING

Stone—Gravel—Sand, Etc.

The illustration shows a Link-Belt Continuous Bucket Elevator, built for the Raritan River Clay Co., Metuchen, N. J., delivering clay to screen, after which it is transferred to railroad cars for shipment. The outfit is simple and efficient.

Let us solve your Elevating and Conveying problems. Our 38 years' experience in the design and construction of machinery for the efficient and economical handling of materials of every description is at your service.

Write for Catalog No. 83.

Address nearest office.

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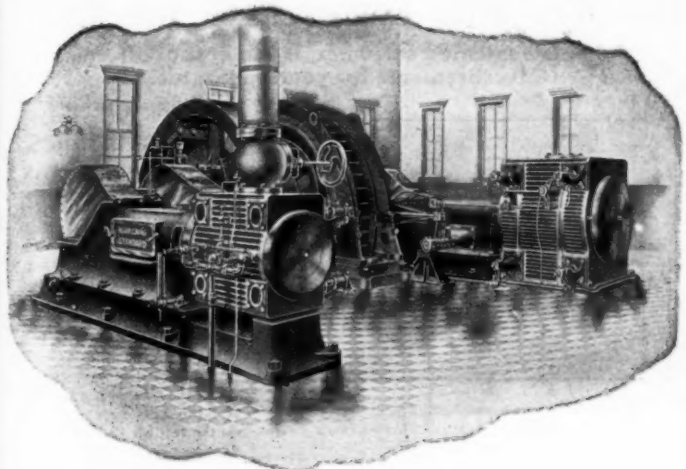
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CHICAGO

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New York.....299 Broadway
Boston.....131 State Street
Buffalo.....601 Ellicott Square
Pittsburgh.....1501-3 Park Bldg.

St. Louis....Central Nat'l Bank Bldg.
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Denver.....Lindrooth, Shubart & Co.
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New Orleans...Wilnot Machinery Co.



Fleming Harrisburg Engines

points are appreciated by CAREFUL INVESTORS.

Single and
Corliss Valve

Simple and
Compound

Manufactured by

Harrisburg

Foundry & Machine Works

Harrisburg, Pa., U. S. A.

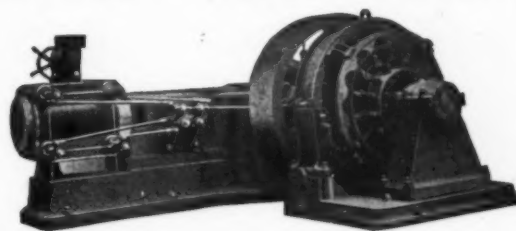
BALTIMORE OFFICE
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NEW ORLEANS OFFICE
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Ridgway

—the engine of Quality and Service



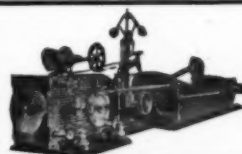
The medium speed, non-releasing Corliss valve engine illustrated above, represents the highest development in a reciprocating steam engine.

Its design is based upon sound mechanical principles, and represents the acme of efficiency and reliability.

We ask you to confirm these claims. Every engine builder uses them, we know, but they are given a different meaning in **Ridgway Construction.**

Our specialty has always been complete electric generating sets. We are pioneers in this respect. Again our line of Motor Generators, Balancer and Booster Sets is very complete. Write for Bulletins.

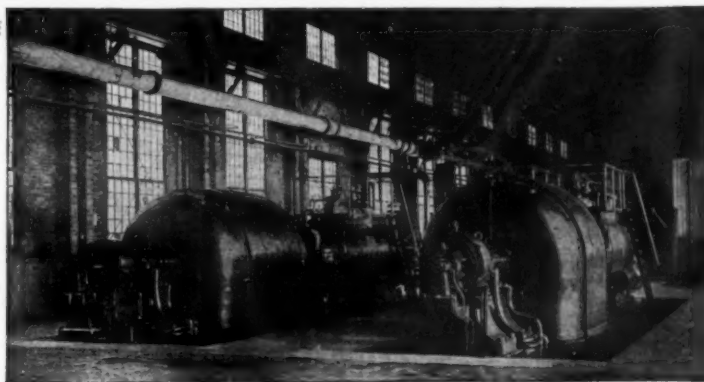
RIDGWAY DYNAMO & ENGINE CO.
RIDGWAY, PA.



The Griffith & Wedge Co.

Established 1840
ZANESVILLE, OHIO, U. S. A.
Manufacturers of

The Ohio Corliss Engine
Send for Catalogue.



Westinghouse Steam Turbines

completely satisfy the owners

Demonstrating their reliability and low cost of maintenance, a customer's recent inspection of a unit after fourteen months of continuous operation, showed absolutely no repairs or adjustments to be necessary, and the unit was immediately put back on its combined industrial and lighting load. Complete information on turbine units of any size may be obtained from our nearest office.

The Westinghouse Machine Co., East Pittsburgh, Pa.

Address nearest Office:

New York, 165 Broadway.
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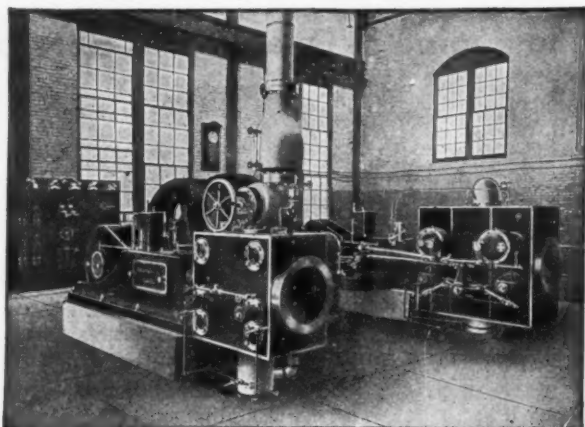
Chicago, 29 So. La Salle St.
Cincinnati, Traction Bldg.
Atlanta, Candler Bldg.

San Francisco, Hunt, Mirk & Co.
St. Louis, Chemical Bldg.
Pittsburgh, Westinghouse Bldg.

Philadelphia, N. American Bldg.
Denver, 1062 Gas & Electric Bldg.

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Ball Engines for Electric Service



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St. Louis, Mo.

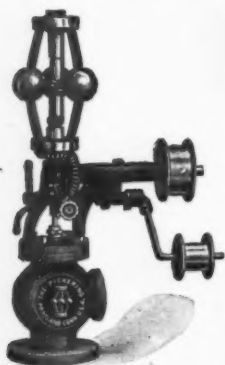
Southwark Foundry & Machine Co.

PHILADELPHIA, PA.

Steam and Hydraulic Engineers

COMPLETE POWER PLANTS

ENGINES—TURBINES—CONDENSERS



For Steam Engines, Turbines,
Gas Engines and Mechan-
ical Control.

PICKERING "THE GOVERNOR WITHOUT JOINTS"

Directness of Action Gives
Greater Efficiency Maximum Durability

BECAUSE—

Absence of joints not only insures closer regulation when installed, but equal efficiency under continued duty, for lost motion cannot result with absence of joints. Stability in Action and Durability in continued duty effects economy, whether Electric Light Service, Saw Milling, or Dredging and Ditching.

WIDE RANGE SPEED CHANGER
AUTOMATIC SAFETY STOP

The PICKERING GOVERNOR COMPANY
PORTLAND, CONNECTICUT, U. S. A.



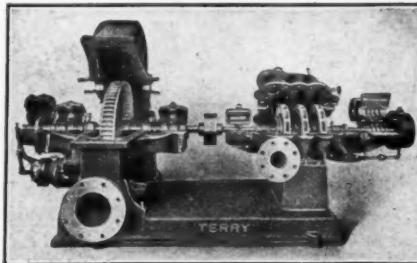
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—the satisfied customer, is the best of all
advertisements for your apparatus

Of the one thousand

Terry Turbines

in use in all parts of the world on land and on sea—in the power plants of public service companies and business enterprises—in the holds of Uncle Sam's torpedo boats and battleships, and of yachts and ships of the merchant marine—in the service of contractors or engineers—more than 850 have been bought on the strength of the success of original first orders. You buy the first Terry—it will do the rest for us. Send for booklet "Terry Service."



Terry Turbine driven multi-stage boiler feed pump.
A million boiler h. p. is supplied by Terry
boiler feed pump sets.

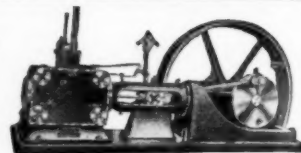
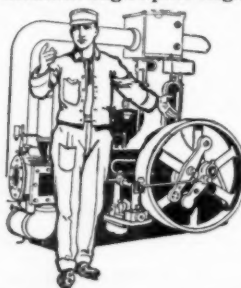
The Terry Steam Turbine Co.

Charlotte, N. C. J. S. Cothran
New Orleans and Houston, A. M. Lockett & Co., Ltd.
Home Office and Works Hartford, Conn. Agencies in All Principal Cities General Sales Office 90 West St., New York 32-64

The American-Ball Angle Compound American Engine Company BOUND BROOK, N. J.

Southern Representatives:
A. St. C. Dunstan, Auburn, Ala.
E. V. Dunstan, 204 Southern Bldg.,
Washington, D. C.

Write for booklet "The Modern
Automatic High Speed Engine"



CORLISS ENGINES

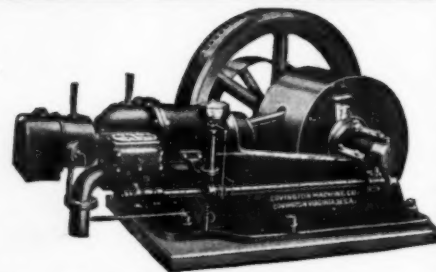
Boilers of all Styles and Sizes
THE MURRAY IRON WORKS CO.
INCORPORATED FEB. 1, 1870
BURLINGTON, IOWA
Engine on exhibition in the Bourse, Philadelphia, Pa.

The Western Gas Construction Co.
FORT WAYNE, IND.

"Ionic" Lamp Posts

FOR ELECTRICITY OR GAS,
Write for Particulars.

ASK YOUR
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ENGINEER



Dependable—Durable—Economical

Covington Machine Co. Main Office and Works: Covington, Va.
COVINGTON OIL ENGINES

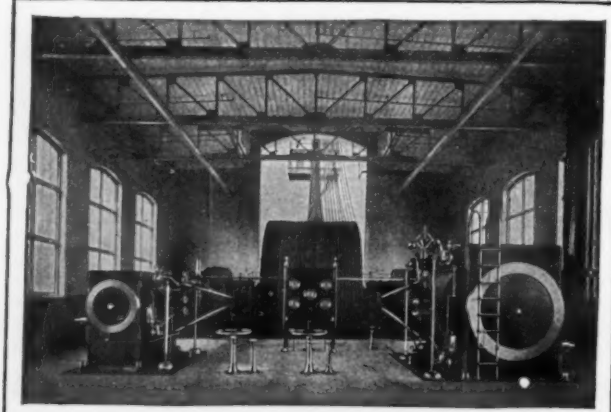
The C. & G. Cooper Company

MT. VERNON, OHIO.

ENGINE BUILDERS

WE ALSO FURNISH

COMPLETE STEAM PLANTS



ATLANTA, 500 Candler Annex
CHARLOTTE, Courthouse Square
NEW YORK, 1419 Bowling Green Building
CHICAGO BRANCH, 1539 First National Bank Building
BOSTON, 301 Devonshire St.
PHILADELPHIA, Drexel Building
PITTSBURGH, 604 Frick Building

Storage Battery Cars For Local Transportation

Large plantations frequently require some means for transporting their employees, or for handling produce. There are also many cases where mills or factories are located some distance from the homes of employees or from a railroad station, and where transportation facilities between these points are not provided. Many large manufacturing plants require an industrial railroad, both for freight and passenger traffic. The cost of trolley line construction in such instances is frequently prohibitive.

These are some of the many services for which storage battery cars, equipped with

"Nycap-Exide" Batteries

are adapted. They require a minimum investment, can be operated at small cost and have ample mileage capacity to meet these conditions.

The reliability and economy of storage battery cars have been well proven by The Third Avenue Railway Co. of New York City. This company has been operating battery cars since February, 1910, now having in operation 51 cars equipped with "Nycap-Exide" Batteries.

Write our nearest office for our new bulletin on Storage Battery Cars.

THE ELECTRIC STORAGE BATTERY CO.

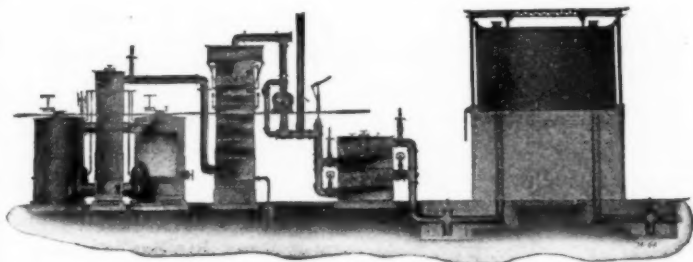
1888

PHILADELPHIA, PA.

1912

ATLANTA SALES OFFICE, CANDLER BUILDING

New York Boston Chicago St. Louis Cleveland Toronto Denver Detroit Los Angeles Seattle San Francisco Portland, Ore.



For Electric Light and Power Plants

the Loomis-Pettibone System is the most efficient and economical—hence the most practical. It produces a clean, fixed gas, absolutely free from tar.

Generators can be brought from cold condition to full capacity in less than 30 minutes, can "stand by" for a long time, require no poking, and are easily operated.

WRITE FOR
BULLETIN PM1102-29

POWER & MINING MACHINERY CO.
WORKS: CUDAHY, WIS.

New York Office: 115 Broadway

DISTRICT OFFICES
New York, Chicago, El Paso
San Francisco

M160.2

THE MIETZ & WEISS OIL ENGINES

Stationary 2 to 400 H. P. Marine 2 to 400 H. P. 150,000 H. P. in operation.

Operate on Kerosene, Cheap
Fuel Oils, Crude Oil, Alcohol
and Distillate, Etc.

Direct connected to
Generators, Pumps, Hoists, Etc.

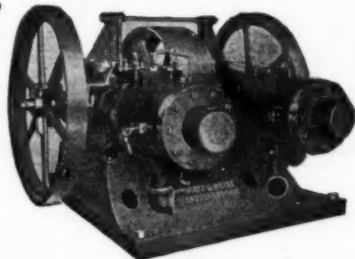
Thousands in use in all parts
of the world.

Send for Catalogue.

A. MIETZ

129 MOTT STREET, NEW YORK

100 H. P. engine using three-cent-per-gallon fuel saves over gasoline at nine cents per gallon \$1800 per year, which represents a capital of \$36,000 at 5 per cent. interest. The same saving can also be had over a steam plant of the same capacity.



Southern Gasoline Engines

We make an improved heavy
duty gasoline engine of all
sizes for all purposes.

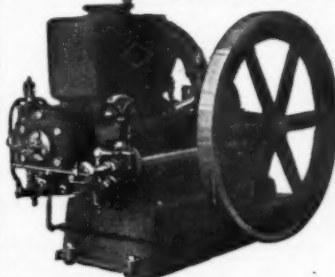
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Write for Catalogues and full
information.

Southern Engine & Boiler Works

Manufacturers

JACKSON, TENN.



JOLIET FORGE COMPANY, Joliet, Illinois

Steam Shovel
Corliss Engines
Mining Machinery
Cement Machinery
Gas Engine

FORGINGS

Send us your blue prints for our quotations.

THE PRIMM OIL ENGINE

OPERATES ON
Crude, Fuel, Gas or Solar Oils, Distillate,
Kerosene or Gasoline.

Two cycle type.
Steady as a clock.
Perfectly dependable
for any purpose.

There is absolutely no
carbonizing in the
cylinders.

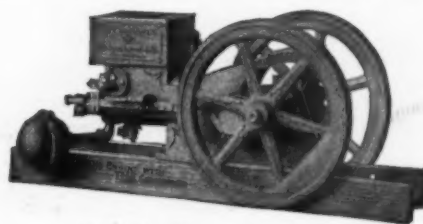
Write for catalog and
name of nearest re-
presentative.

That for week—Our engines are guaranteed to run.



The Power Mfg. Co.
Cor. Broadview Ave. and C. & E. R. R.
LIMA, OHIO

Van Duzen Gasoline Engines and Jacks



1½, 2½, 4½, 6, 8, 12 H. P.

Send for our Catalogue. You will be Interested.
We have the Quality and the Price.



Van Duzen, Royce & Co., Columbus, Ohio

Don't Be Caught Short in a Fan Famine

For the past few years there has come a certain few weeks when "Standard" dealers have been raided by a host of buyers and were left without a sufficient stock for the balance of the season.

Now you need have no "Fan famine" in your store if you get busy now and send in your order.

If you are not now handling

**Robbins & Myers
STANDARD Fans**

(DIRECT AND ALTERNATING CURRENT)

Ask for our Fan Art Book and proposition particulars. Prompt shipment. A fan for every purpose.

**THE ROBBINS & MYERS COMPANY
SPRINGFIELD, OHIO**

BRANCHES: New York, Boston, St. Louis, Cleveland, Chicago, Philadelphia, Atlanta, Rochester, New Orleans, Pittsburgh

We also manufacture a complete line of D. C. and A. C. Motors for all purposes.



THE SANITARY DISTRICT OF CHICAGO

American Trust Building
Electrical Department, May 6th, 1912

CROCKER-WHEELER CO. Ampere, N. J.

Gentlemen:

Replying to your inquiry regarding the operation of our generators, we are pleased to advise that the seven 4000 K. W. 60-cycle, 6600-volt generators furnished by you are operating to our entire satisfaction, and we never have trouble with them. Our satisfaction is best expressed when it is considered that we originally purchased four of your machines and then made our additions one at a time up to and including the 7th unit.

The manner in which you have completed the several contracts we have entered into has been very satisfactory to the Sanitary District.

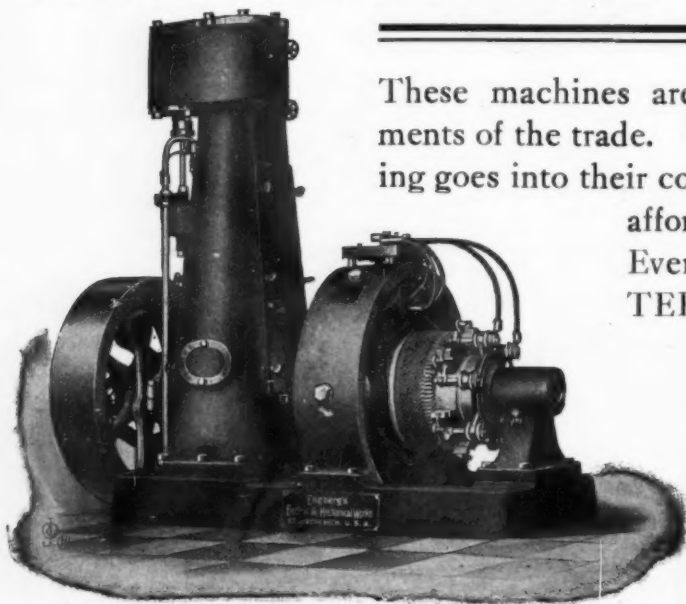
Very truly yours,

EDW. B. ELLICOTT,

Electrical Engineer.

The "ENGBERG"

DIRECT CONNECTED GENERATING SETS



2 1-2 TO 50 KILOWATT

These machines are designed to meet the most exacting requirements of the trade. They have a perfect Lubricating system. Nothing goes into their construction but the very best material the market affords, and they require but very little attention. Every machine is sold under a binding GUARANTEE as to rating, stability and performance.

You can make electric current cheaper than you can buy it from the mains.

WHY NOT SAVE THE SELLER'S PROFIT?

Send for Bulletins and Testimonials.

Our Prices are Interesting.

Write us today.

ENGBERG'S ELECTRIC & MECHANICAL WORKS

VINE STREET, ST. JOSEPH, MICHIGAN, U. S. A.

We also build Gasoline Engine Operated Direct Connected Generating Sets.



Picker Motor

Motors Designed Solely for Textile Mills



Loom Motor

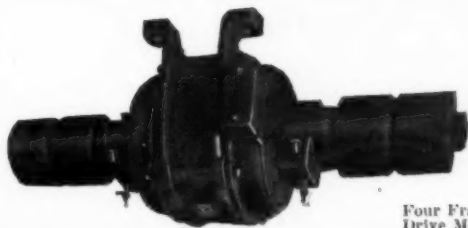
The electrical and mechanical features of G. E. textile mill motors were determined by a careful study of each machine used in the textile industry.

These motors embody the experience of twenty years, during which they have been pre-eminent in the the textile industry. This is shown by the fact that over 75% of all electric power used in the textile mills of this country passes through G. E. motors.

Minimum Attention

Where a small amount of power is required totally enclosed motors are furnished which minimize the attention required.

Waste packed bearings are used on motors for the individual driving of looms. They have been known to run two years without attention, and with them oil-fly is impossible.



Four Frame Drive Motor

Cool Operation Assured

The active magnetic material of motors made by the General Electric Company is exposed to the air. No *dead air spaces* (such good heat insulators) are found in the construction of these motors.

Electrical Characteristics Designed Especially to Suit the Machine Driven

A few of the many designs of alternating current G. E. Motors which were designed solely for textile mill power are shown on this page. Electrically the motors vary, for "high efficiency" is necessary to reduce the cost of power to a minimum; high "power factor" is essential to keep down the investment at the generating plant; small "slip" is required to furnish the best speed regulation. The "starting torque" required to quickly and smoothly bring the motors up to speed must also be provided.

Each textile machine requires its own combination of these features in a driving motor. We make all the combinations and keep them strictly up-to-date by embracing every good feature of contemporary motor design.

Our textile mill specialists will carefully study your drive conditions and recommend an electric drive which will satisfy you.

General Electric Company

Largest Electrical Manufacturer in the World

Principal Office: Schenectady, N. Y.

Sales Offices in the following Cities

Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boise, Idaho.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Charleston, W. Va.
Charlotte, N. C.

Chattanooga, Tenn.
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Cincinnati, Ohio.
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Columbus, Ohio.
Dayton, Ohio.
Denver, Colo.
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of Sol'g Agt.)

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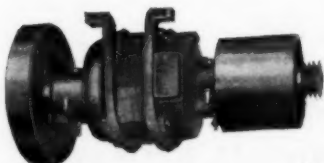
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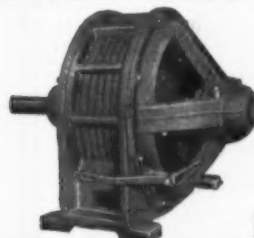
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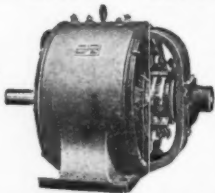
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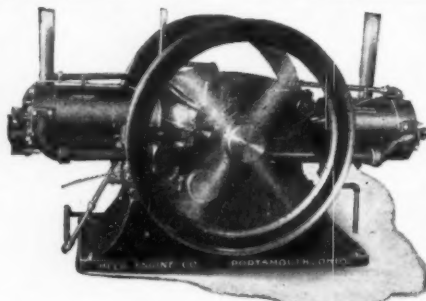
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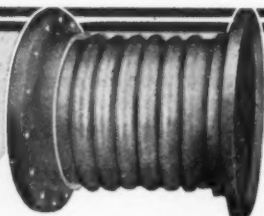
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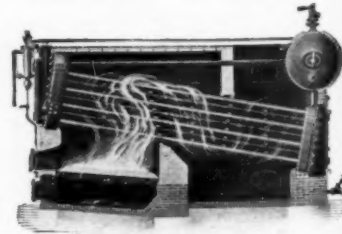
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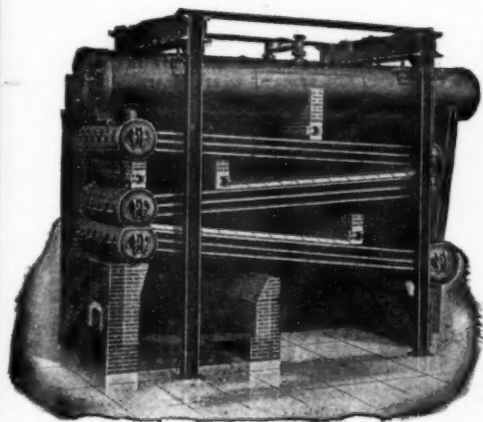
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If there is $\frac{1}{4}$ inch of scale in your boiler, you are burning about one-third more coal than you would require if your boiler was clean. Of every 100 tons of coal, at \$3.00 per ton, you can therefore save \$100.00 by doing away with the scale.

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We have simply adapted the principle of nature in J-M Boiler Preservative to meet modern boiler requirements. J-M Preservative is made of natural salts. We do not have any laboratory, except that of Nature, and we do not make any high-priced diagnoses.

J-M Boiler Preservative

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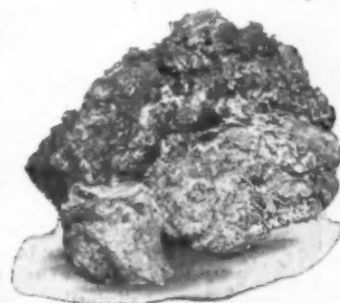
J-M Boiler Preservative is the cheapest remedy for boiler scale on the market. Nature does not charge us much for it, and we, in turn, give you the benefit.

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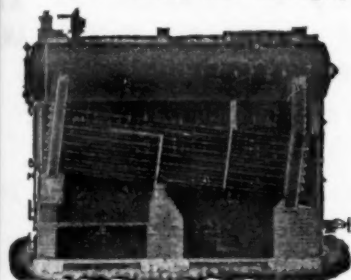
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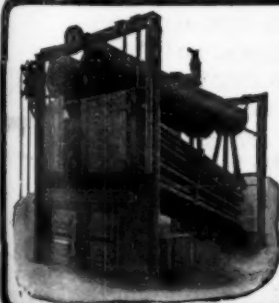
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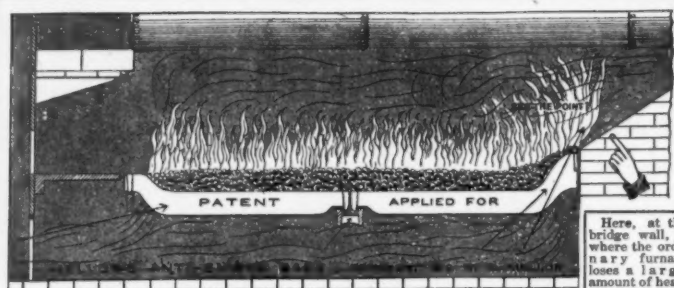
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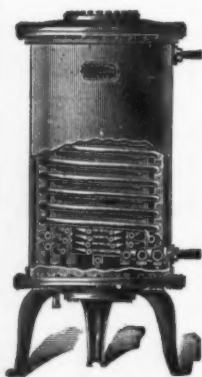
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Is guaranteed to deliver the water to the boiler at boiling temperature (210 to 212 degrees). It will also extract the oil from the exhaust, so that the steam after passing through the heater may be used for other heating purposes and the condensed water returned to the boiler without any additional elimination.

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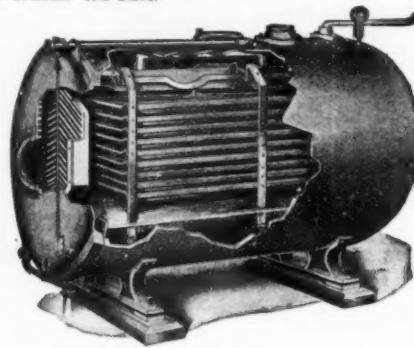


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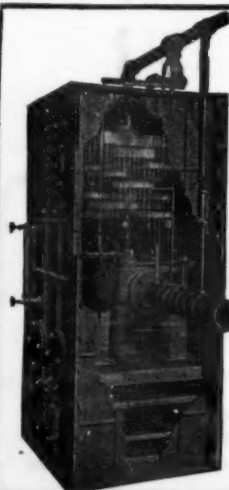
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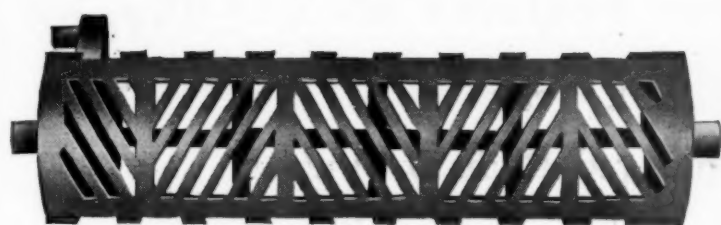
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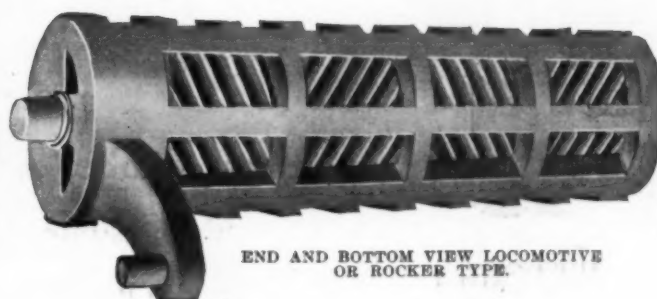
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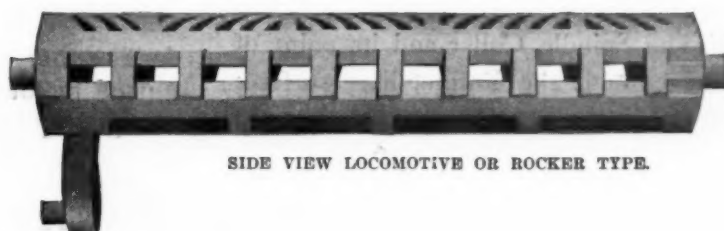
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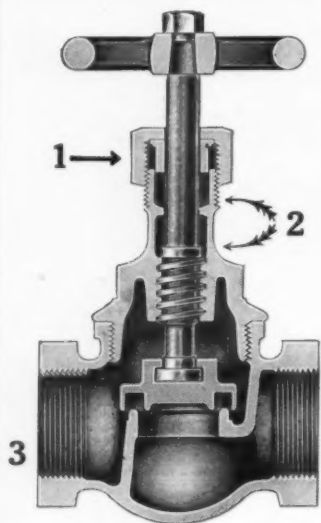
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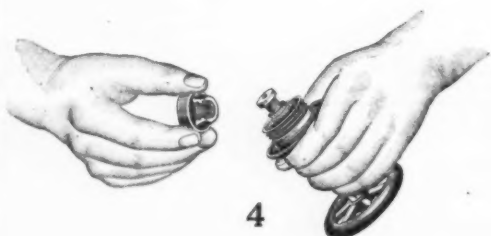
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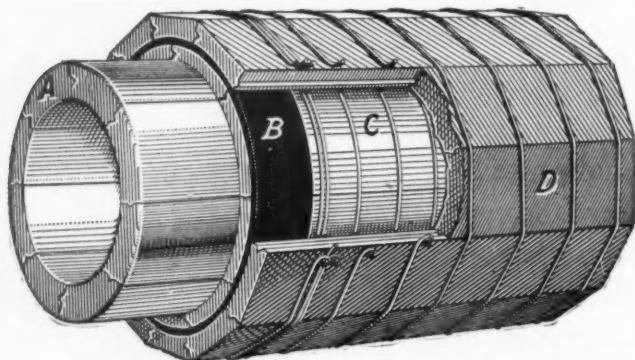
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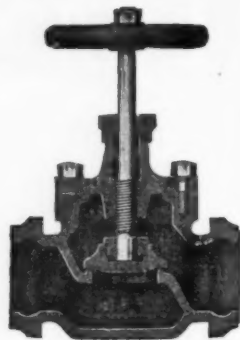
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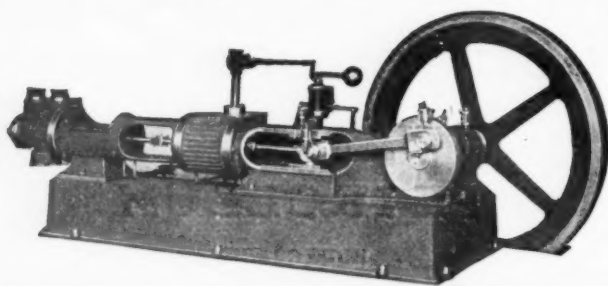
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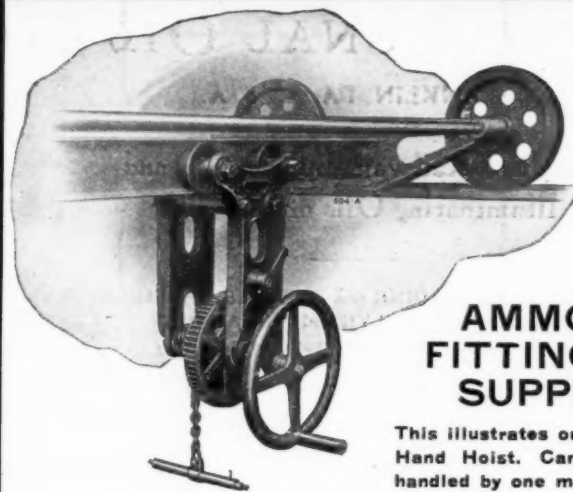
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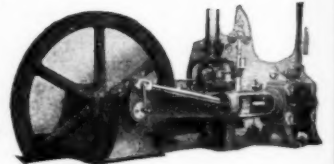
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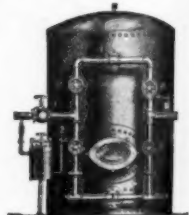
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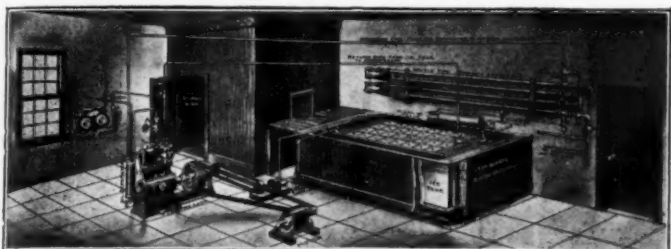
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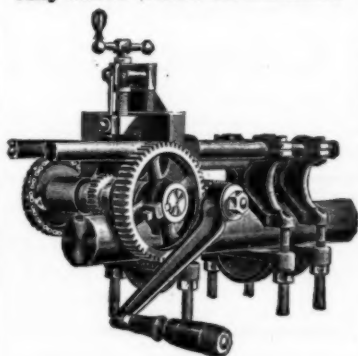
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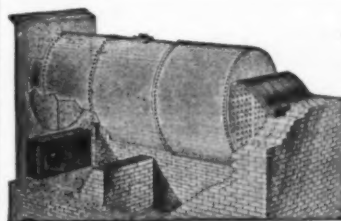
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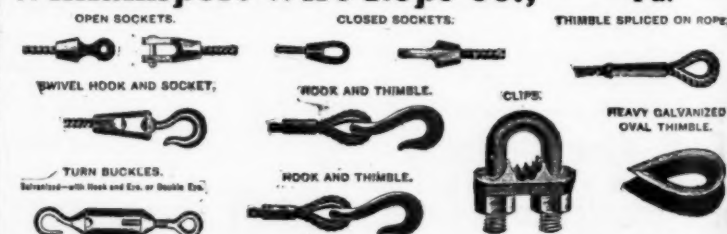
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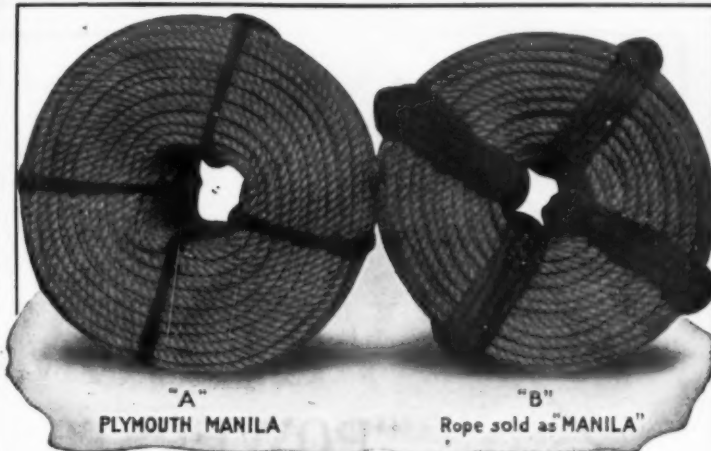
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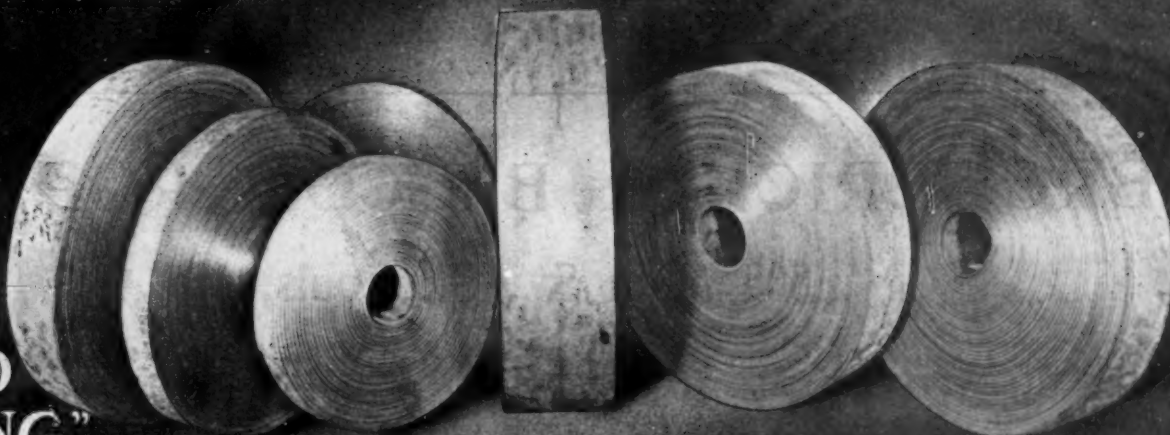
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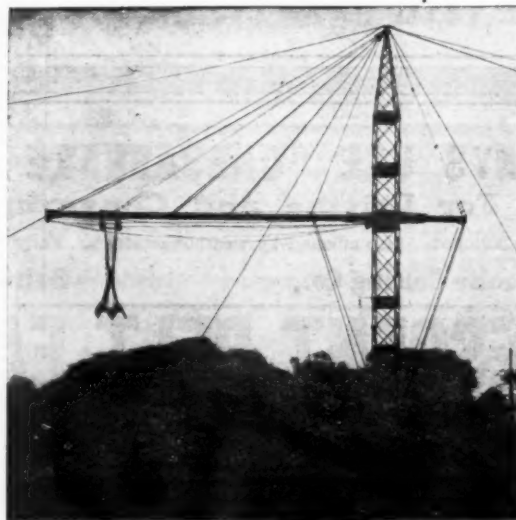
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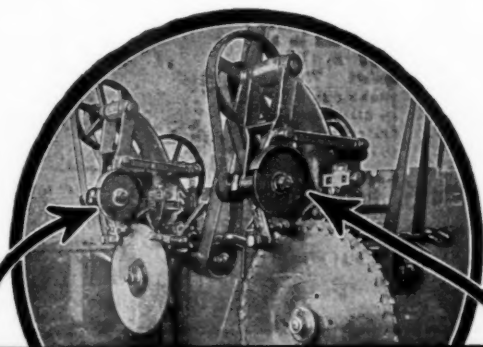
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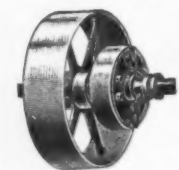
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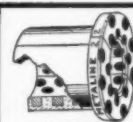
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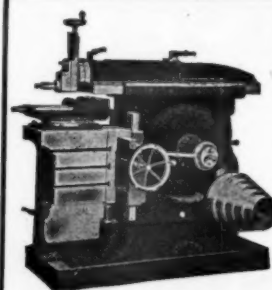
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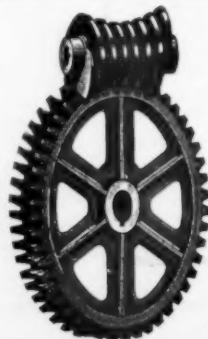
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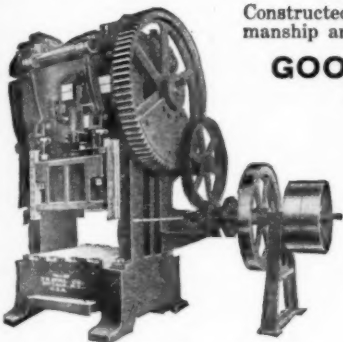
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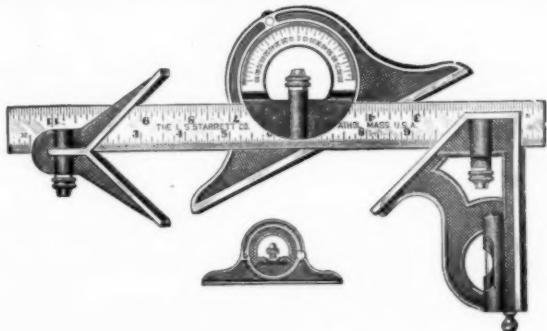
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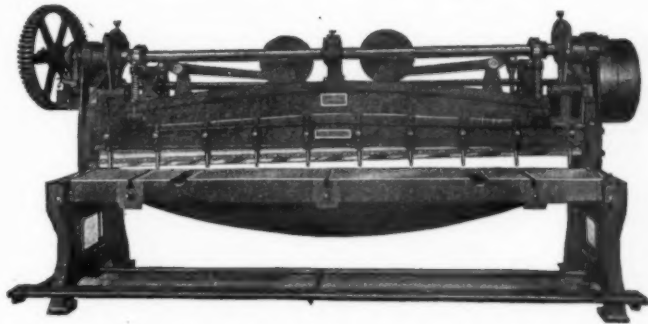
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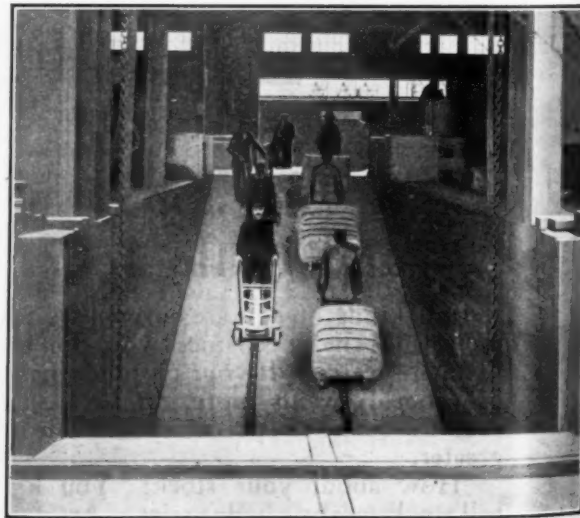
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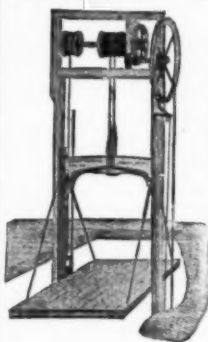
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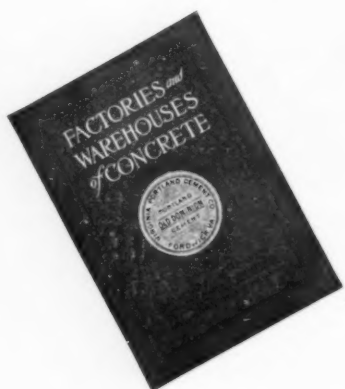
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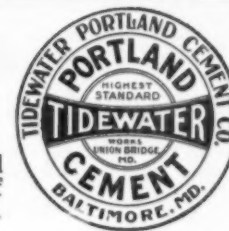


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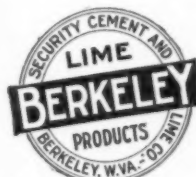
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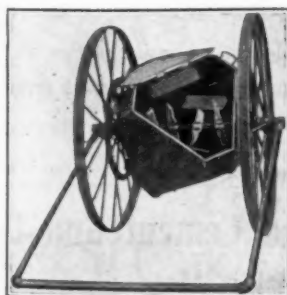
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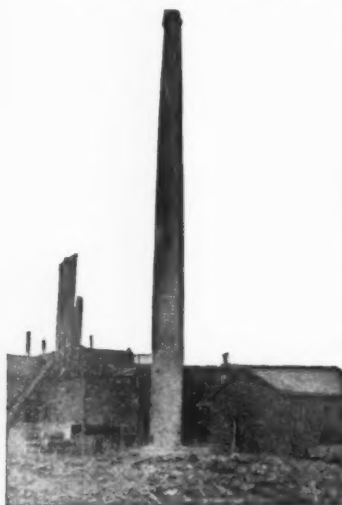
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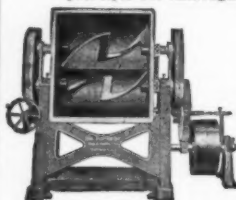
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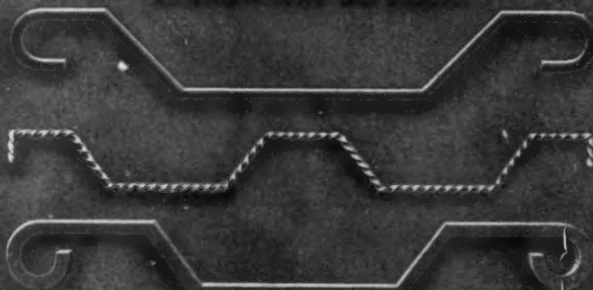
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The New England Cement Gun Company is operated by the Ambursen Hydraulic Construction Company. The headquarters are, therefore, at 88 Pearl Street, Boston, Mass. The New York office, however, will not be at the office of the Ambursen Hydraulic Construction Company, 111 Broadway, but for concentration of energy and experience will be at the general offices of the Eastern Cement Gun Company and other Associated Companies, 30 Church Street, New York. Correspondence can be addressed to either office.

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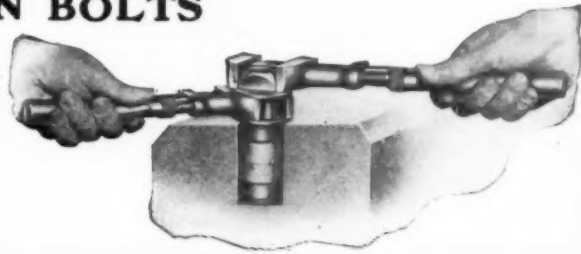
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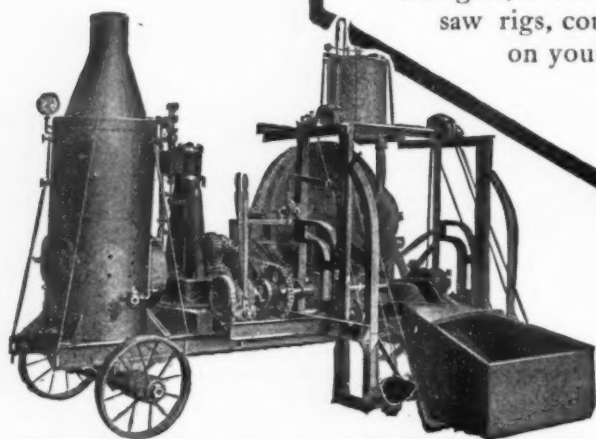
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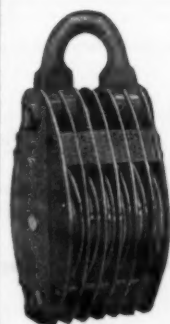
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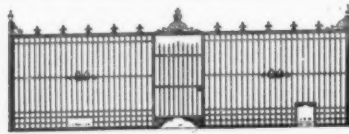
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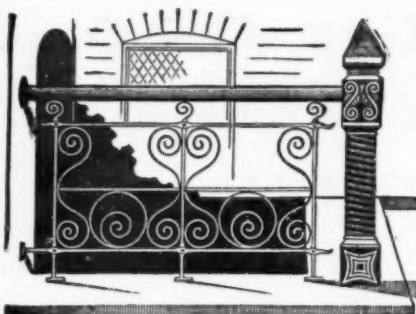
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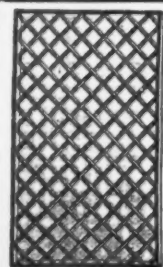
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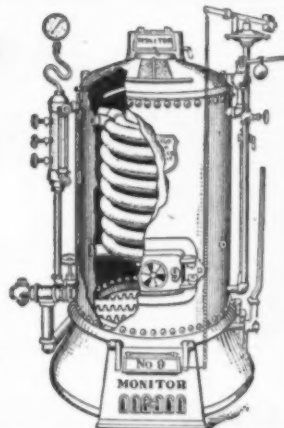
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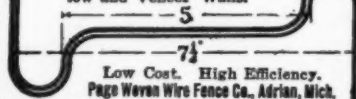
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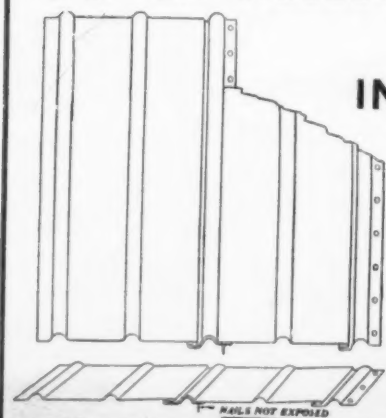
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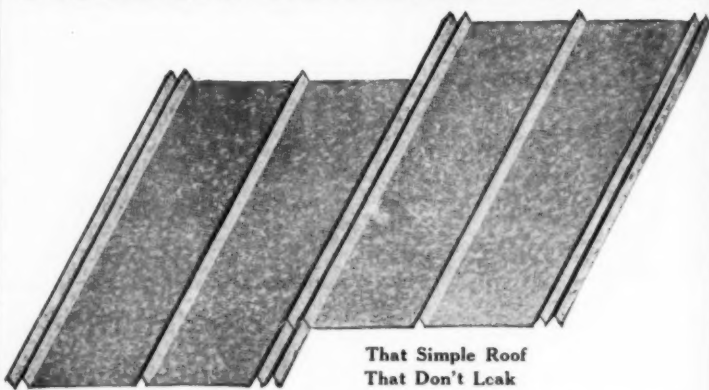


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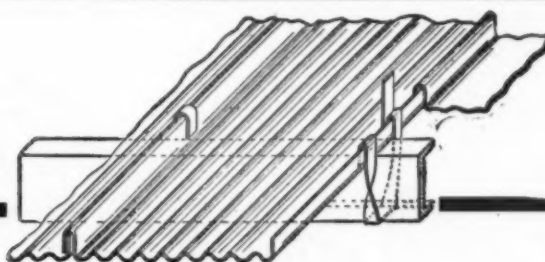
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Best and Cheapest Made By

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**CORRODING FUMES DON'T INJURE IT**

Our prepared gravel roofing is not injured in the least by acids, steam or any kind of corroding fumes. It is hence very suitable for any kind of a building. Can't we interest you in it now?

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Made by W. Simonson, Analytical Chemist, Cincinnati, O.

Immersion in 25 per cent. Sulphuric Acid at 140 degrees F. for three hours:

"LED-KOTE".....Gain 3.93 grains per sq. ft.
Pure Iron Black.....Loss 751.6 grains per sq. ft.
Galvanized.....Loss of all zinc coating in one minute fifteen seconds.

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Where there is smoke, there you will find sulphuric fumes, therefore

Cisco Led-Kote Is Best

Now take a sheet and try and break the coating
Hammer it with a sledge; you can't hurt it

It Just Naturally Sticks

And you can't find a more durable, a more economical material for roofing, siding, piping, tanks, etc.

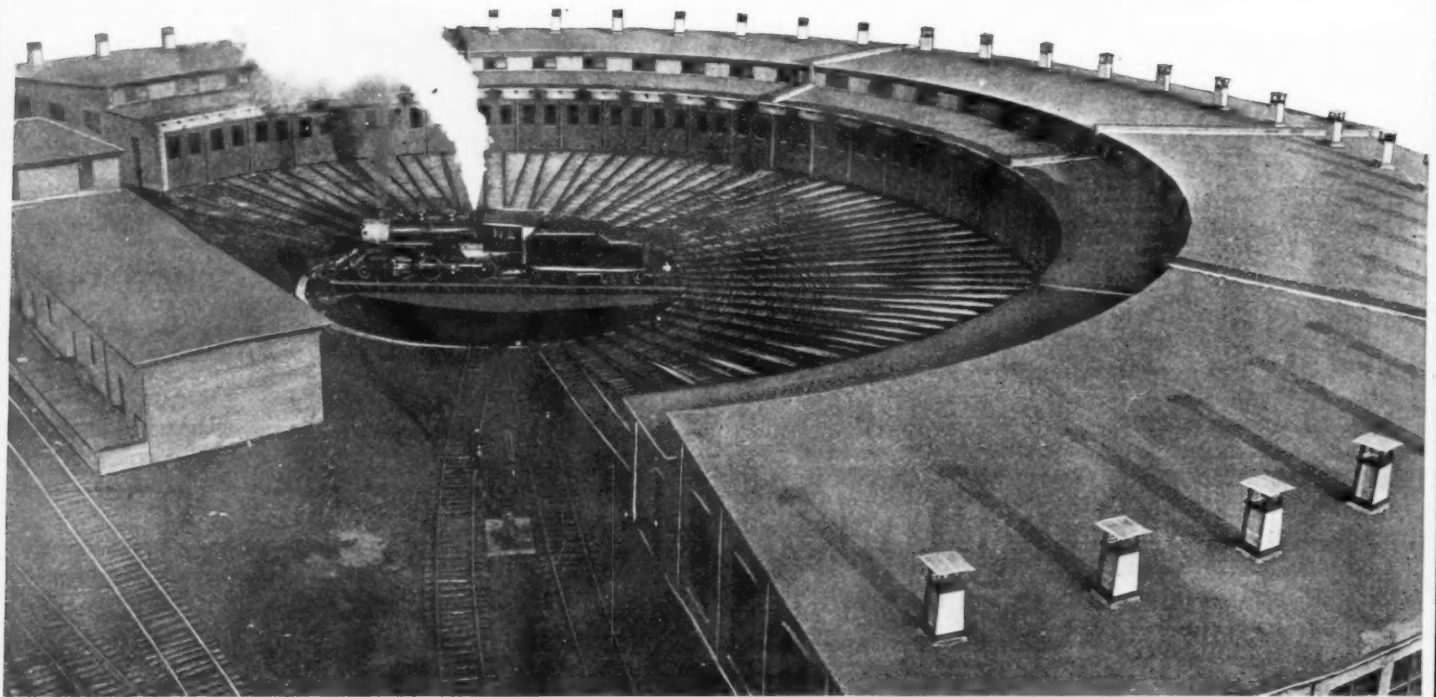
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The Cincinnati Iron & Steel Co.
Cincinnati, Ohio

Barrett Specification Roofs

Maine Central Roundhouse,
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The Railroad Test

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Its low cost makes it attractive to begin with, and the fact that there is no maintenance expense, such as painting or coating, makes the net cost per year of service far below that shown by any other roof covering.

The reasons which make Barrett Specification Roofs particularly desirable for roundhouses make them even more desirable and economical when used on manufacturing plants, warehouses, apartments, in fact, on all flat-roofed commercial structures.

Every architect, engineer and owner should have a copy of The Barrett Specification with tracings for use in future building plans, and we are pleased to mail same free on a request addressed to our nearest office.

Special Note

We advise incorporating in plans the full wording of The Barrett Specification, in order to avoid any misunderstanding.

If any abbreviated form is desired, however, the following is suggested: **ROOFING**—Shall be a Barrett Specification Roof laid as directed in printed Specification, revised August 15, 1911, using the materials specified, and subject to the inspection requirement.

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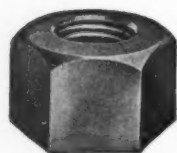
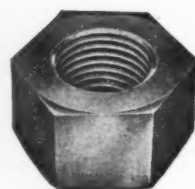
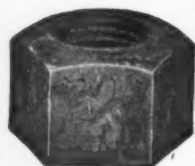
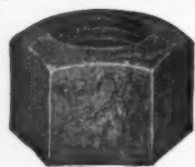
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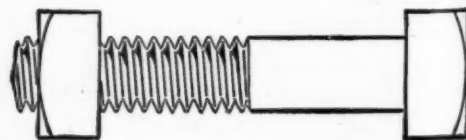
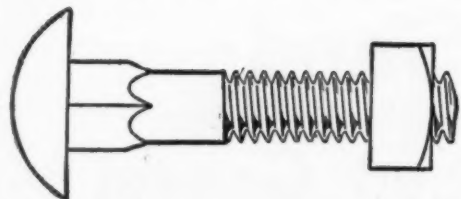
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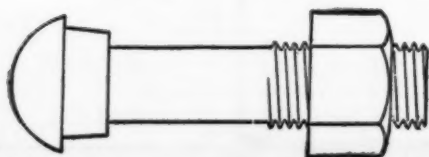
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Turpentine Production Increased by Blasting Stumps with Red Cross Dynamite

Several of the larger Turpentine Companies in Georgia and Florida have recently been conducting experiments with dynamite which have yielded excellent results.

It has been known for some time that stumps contain a larger proportion of the raw material, from which turpentine, rosin, tar, wood oil, creosote, etc., are obtained, than is contained in the trunk and branches of the tree.

The cost of getting the stump out of the ground and breaking it up into sizes that would go into their retorts had been so high as to deter Turpentine Manufacturers from utilizing stump wood.

But Red Cross Dynamite has solved their problem. Typical of tests made by several Turpentine Companies, we quote from a report written by the President of the National Turpentine Company of Georgia. He says:

"When measured, the stump wood amounted to seventeen cords. The total cost of explosives and labor was \$50.89, or an average of about \$3.00 per cord. These seventeen cords, treated, yielded eight gallons more of turpentine per cord, thirty pounds more of rosin and twenty gallons more of tar than ordinary wood. I am very much pleased with these results and expect to use dynamite for this purpose hereafter."

We should be pleased to send our particulars, describing practical and economical methods of stump blasting, to any Turpentine Company that would be interested in reducing costs and increasing their production along lines shown by these experiments to be correct.

Ask for Farmers' Handbook No. 369 and Special Turpentine Letter.

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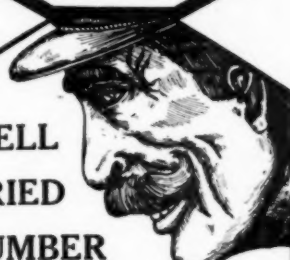
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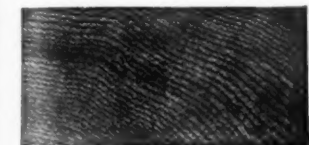
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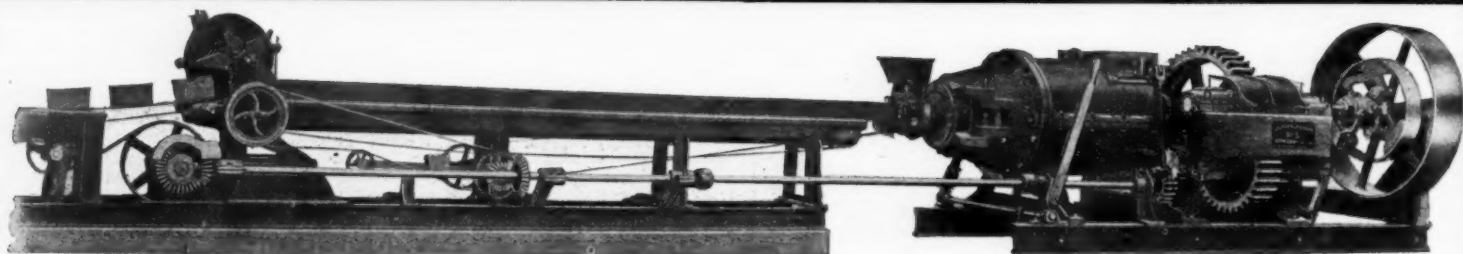
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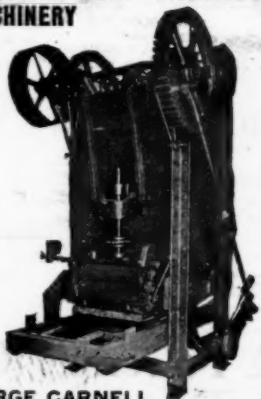
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ALUMINUM

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STEEL & WIRE CO'S

AMERICAN PIANO WIRE

REPRESENTS the
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for perfect acoustic re-
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Electrical Wires and	and Calks
Cables	Shafting Cold Drawn
Rail Bonds	Steel
Bale Ties, Tacks,	Wire of Every
Nails, Staples, Spikes	Description

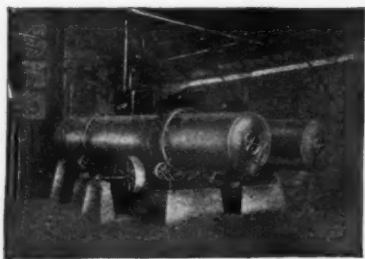
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An Installation for Drying Coal

Tests under working conditions show that

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are most satisfactory and most efficient for drying cement rock, coal, clay, slag, ores, concentrates, gypsum, and scores of other organic and inorganic substances.

The gases are drawn through the inner shell, then back through the material to be dried. Exhaust temperature is less than 100° F. This means efficiency.

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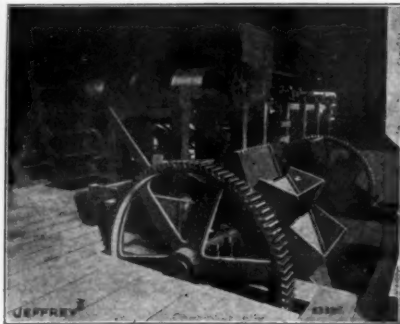
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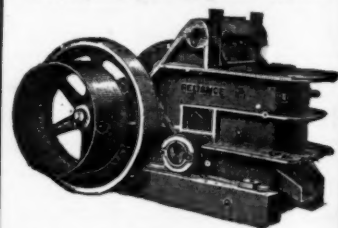
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1700 Machines Now in Use.

The Williams Patent Crusher & Pulverizer Co.

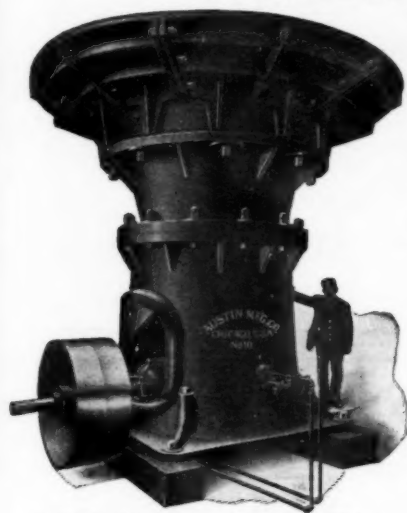
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Our opinion is worth something to you in problems of



Austin Gyratory Crushers, 9 sizes, 50 to 5000 tons capacity per day.

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Road
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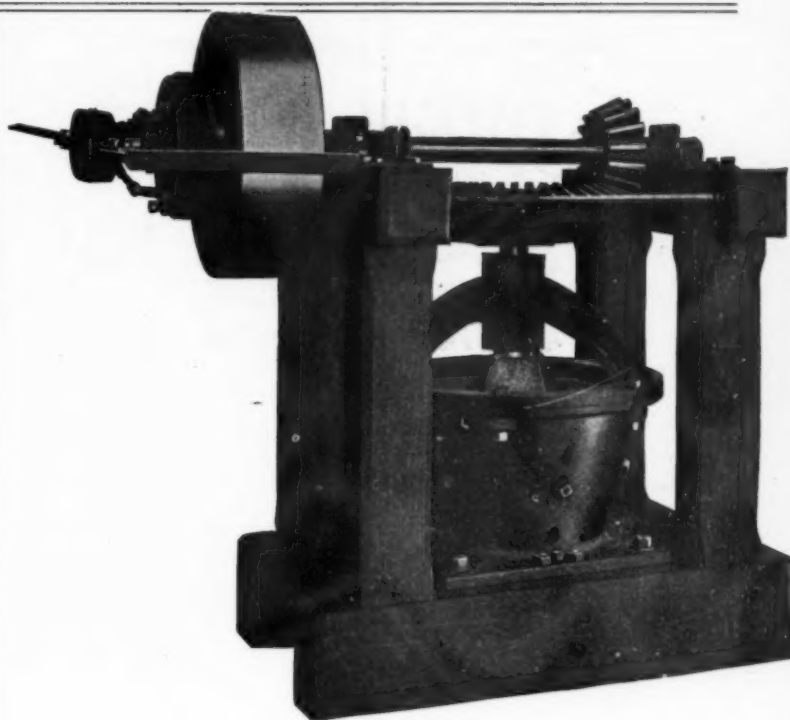
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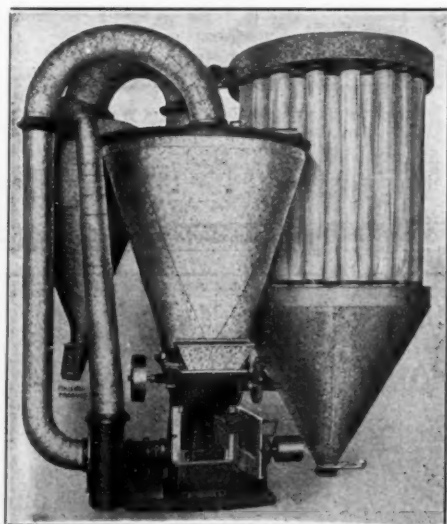
Bone Crusher

This crusher crushes large bones and other fertilizer material so they will be ready for the grinding mill, saving wear and tear on the grinders, increasing their capacity, and preventing iron or other foreign material entering them. Let us tell you more.

WALKER & ELLIOTT, Wilmington, Del.

Fertilizer Machinery Specialists.

Everything required in a Fertilizer Factory.



Raymond No. 00 Pulverizer and Air-Separator with Cyclone Tubular Dust Collector

Raymond Mills with Air-Separators Require no Preliminary Grinders, Elevators or Conveyors

We can demonstrate to the satisfaction of any plant owner or engineer who give us the opportunity, that Raymond Mills are the most economical in the initial cost, the most effective in producing a powdered product of the greatest degree of fineness, a more uniform product at all times, and at a cost in power and in upkeep that is unequalled by any other known method.

We can show how the Raymond System renders unnecessary the installation of preliminary crushers and much conveying, elevating and handling machinery which other methods require.

As we use no bolters, reels or screens for separating the ground product, we can show how, by Air-Separation, we eliminate all the initial cost for such antiquated, troublesome equipment with their expensive replacements and repairs. The

RAYMOND PULVERIZING-SYSTEM AIR SEPARATING SYSTEM

grinds uniformly finer than all others, and as fast as the material reaches the required mesh the Air-Separators take the product from the grinders while they continue to work and convey it to any point desired in the plant.

It is the only new method of value which has been developed in years in the grinding of refractory materials.

These systems are installed on an absolute guarantee that they will perform a stated definite service or you are not expected to approve the equipment.

Send for our Book which explains in detail what our system is, and how and where it may be used.

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

Raymond Bros. Impact Pulverizer Co.

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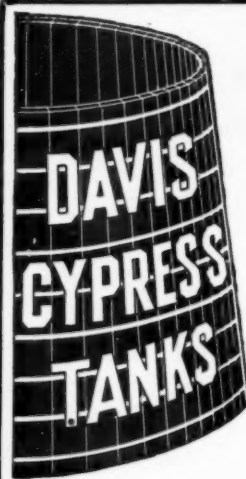
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CALDWELL TANKS

are made from the genuine Louisiana Swamp Cypress, which seems to have been specially designed by nature for tank purposes, as it resists wear and decay amazingly. The use of this wood combined with our scientific hooping and skilled construction causes the Caldwell tanks to give a lifetime of high-class service with a minimum of attention and repair.

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Show the class of work we have been building for the past sixteen years for Water-works Plants, Railways and Sprinkler Systems.

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Consequently we are in the best position to make low prices on Eastern and Southern as well as Western business.

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All Kinds of Plate and Sheet Iron Work.

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Combination under and above ground. No seepage, no Typhoid, but pure, cool aerated water.

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ELEVATED STEEL

TANKS TOWERS

Mechanically Correct in Design and Workmanship
Any Size, Erected Anywhere

Structural Iron Work Stand Pipes Boilers

R. D. COLE MFG. CO. - - - **NEWMAN, GA.**

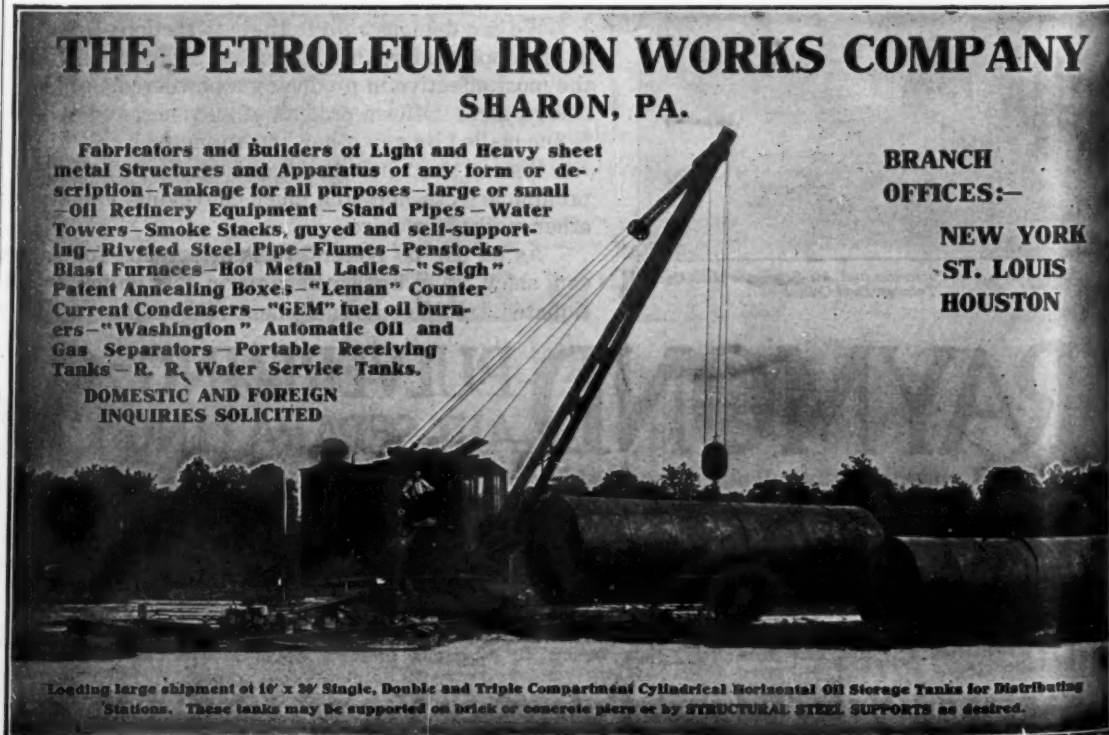
THE PETROLEUM IRON WORKS COMPANY SHARON, PA.

Fabricators and Builders of Light and Heavy sheet metal Structures and Apparatus of any form or description—Tankage for all purposes—large or small—Oil Refinery Equipment—Stand Pipes—Water Towers—Smoke Stacks, gayed and self-supporting—Riveted Steel Pipe—Flumes—Penstocks—Blast Furnaces—Hot Metal Ladles—"Seigh" Patent Annealing Boxes—"Leman" Counter Current Condensers—"GEM" fuel oil burners—"Washington" Automatic Oil and Gas Separators—Portable Receiving Tanks—R. R. Water Service Tanks.

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INQUIRIES SOLICITED

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ST. LOUIS
HOUSTON



Loading large shipment of 10' x 20' Single, Double and Triple Compartment Cylindrical Horizontal Oil Storage Tanks for Distributing Stations. These tanks may be supported on brick or concrete piers or by STRUCTURAL STEEL SUPPORTS as desired.

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for

Quality, Efficiency and Economy

Made in different grades and sizes to meet the different blasting requirements.

Quarry Powder has no superior in Quarry Work.

Collier and Coal Special "Permissible Powders" for gaseous and dusty mines.

"Farm Right" Dynamite for Stump and Boulder blasting, Tree Planting, Orchard Rejuvenating, Swamp Draining, Ditching, Sub-soil or Hardpan Blasting.

We better conditions by meeting them. Consult us when in doubt.

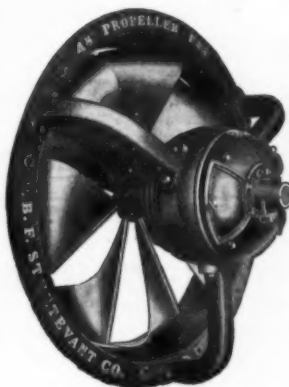
**KEYSTONE NATIONAL
POWDER COMPANY**
EMPORIUM, PENNA.

The Remedy

For that hot and stifling room is a

Sturtevant Electric Propeller Fan

Also Made for Pulley Drive



They increase output, reduce sick leave, and raise efficiency of workers by keeping the air fresh and cool.

Easily and cheaply installed, the first cost is small.

The scientific construction and design of the fan blades makes possible the moving of immense volumes of air at small expenditure of power.

These fans are invaluable for use in work rooms, offices, kitchens, billiard halls, and in all places where heat, smoke or fumes are to be removed.

Our engineering staff are always ready to make suggestions if you will inform us of the conditions to be met, the size of the room, etc.

Bulletins 146 N and 149 N describe these fans.

B. F. Sturtevant Co.
Hyde Park, Mass.

Offices within calling distance from all large centers.

No. 559

NEW PLANT UP-TO-DATE NEW MACHINERY
Rome Scale & Manufacturing Co.
ROME, GA.
MANUFACTURERS OF
SCALES AND TRUCKS
OF ALL KINDS.



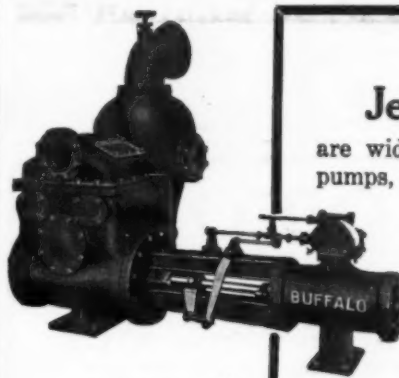
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WE MAKE A SPECIALTY
OF SCALES FOR
RAILROADS
OIL MILLS
AND FERTILIZER WORKS

Our scales contain every improvement known to modern science in the manufacture of heavy weighing machines.

HOWE SCALE CO. 341 Broadway, N. Y.



"Buffalo" Jet Condensers

are widely used to serve engines, pumps, turbines, vacuum pans, etc.

Action is simple and positive under all conditions. Does not stick or short-stroke.

Maintains a high vacuum with a minimum of injection water and steam consumption.

Write to Dept. Q for sizes, capacities and prices.

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BUFFALO, N. Y.

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Almost all of the material used in the manufacturing world is bought or sold by weight. Consequently it is up to every manufacturer to have scales that can be depended on to weigh right all the time.

It isn't enough to know that your scales will weigh right when they are first set up. You want to know that they are going to stay right.

"The Standard" Scales are made right, will weigh right today, tomorrow and next year.

And besides this, they are sold at a price that is right, and the price is not controlled by any "Trust." Tell us what kind of a scale you want, and we will tell you more about them, and how you can save money, and gain in quality by buying "The Standard" Scales.

The Standard Scale & Supply Co., 243-245 Water St., Pittsburgh, Pa.

BRANCHES: CHICAGO CLEVELAND PHILADELPHIA CINCINNATI ST. LOUIS NEW YORK

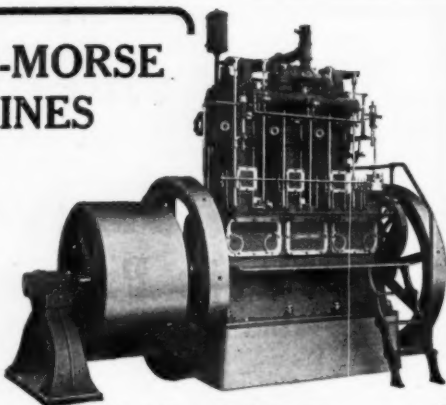
FAIRBANKS-MORSE OIL ENGINES

The leading consideration in their construction is reliability. Every detail tending to increased efficiency, convenience, accessibility and durability has been carefully worked out.

Vertical Types; 50 to 200 H. P.
Horizontal Types; 5 to 80 H. P.

Catalog No. 938RE.

Fairbanks, Morse & Co., 150 H. P. Type "RE" Oil Engine
Atlanta, Ga.; Jacksonville, Fla.
Richmond, Va.; New Orleans, La.
Main Office: 900 So. Wabash Ave., Chicago, Ill.



YELLOW STRAND WIRE ROPE

See advertisement on page 22

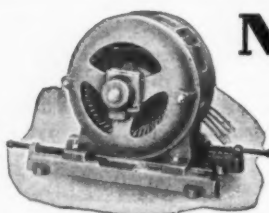
YELLOW STRAND never betrayed a confidence

BRODERICK & BASCOM ROPE CO., 809 N. Main St., ST. LOUIS, MO.

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PERMANENT SKYLIGHTS
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End caps on Allis-Chalmers Motors prevent dust and dirt getting into the bearings and damaging them. This is a great advantage in mills in which there is considerable dust or lint.

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The Time to Put Out a Fire
is When It Starts.

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AUTOMATIC SPRINKLERS

have put out 10,000 fires before they had a chance to gather headway, and kept 5000 others from spreading.

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EXECUTIVE OFFICES: PROVIDENCE, R. I.

See our Advertisement
on page 3.

Plants, Warehouses and Offices in Principal Cities of
the United States and Canada.

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Set the Standard for Quality

MIRROR SPINNING RINGS

THERE ARE

TRADE MARK REG. U.S. PAT. OFF.

DRAPER COMPANY

NONE OTHERS

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"JUST AS GOOD"



THE ORIGINAL STEAM JET PUMP

Adapted for tanneries, creameries, R. R. water stations, etc.
Has no valves. Durable, economical, simple.
Write for catalogue.

BLAKESLEE MFG. CO., 27 Du Quoin St., DU QUOIN, ILL.

MOLONEY TRANSFORMERS

MOLONEY ELECTRIC CO., ST. LOUIS, U. S. A.

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Manganese Steel Castings

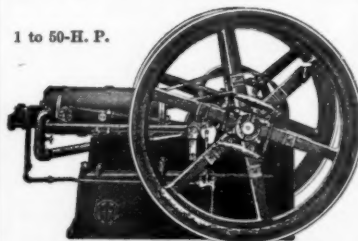
EDGAR ALLEN AMERICAN MANGANESE STEEL CO.

CHICAGO, ILL.

NEW CASTLE, DEL.

IHC Gasoline Engines and Tractors

1 to 50-H. P.



High-grade four-cycle engines, made in every style, horizontal and vertical, air and water cooled; stationary, portable and mounted on skids. Operate on gas, gasoline, kerosene, naphtha, distillate, or alcohol. Kerosene-gasoline tractors, 12, 15, 20, 25 and 45 H. P.

I H C engines are general purpose machines for use on farm, in mill, factory or railroad equipment. I H C tractors are used for plowing, hauling, road grading—for every form of drawbar and belt work. Catalogues and full information on request.

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)

700 Harvester Bldg.

CHICAGO U.S.A.

ROEBLING

WIRE ROPE

Made from Roebling Wire drawn from carefully selected and tested metals and stranded into rope in accordance with designs shown by long experience to be best adapted for satisfactory service.

JOHN A. ROEBLING'S SONS CO.

SO. OFFICE, Empire Bldg., ATLANTA
WAREHOUSE IN SAVANNAH

Trenton, N. J.

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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade Name Registered in the U. S. Patent Office

Vol. LXI. No. 22.
WEEKLY.

BALTIMORE, JUNE 6, 1912.

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{ SINGLE COPIES, 15 CENTS.

Manufacturers Record

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BALTIMORE.

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Subscription, \$4 a year
(payable in advance) to United States,
Mexico, Cuba, Porto Rico, Hawaii and
the Philippines.

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the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as sec-
ond-class matter.]

BALTIMORE, JUNE 6, 1912.

THE MISSISSIPPI RIVER PROBLEM.

United States Senator LeRoy Percy
of Mississippi, in a letter to the MANU-
FACTURERS RECORD, says:

I gather from the thoughtful editorials
that you have given the matter of Missis-
sippi River improvement much investigation
and thought and have shown in these edi-
torials a clear conception of the situation
and the duty of the Federal Government in
the premises.

The problem of the control of the
Mississippi River has been before the
MANUFACTURERS RECORD for thirty
years. It has followed as closely as
possible all discussions of the subject
in that time, and has lost no opportunity
to do its part in furthering every plan
that promised a solution on right lines.
We believe that the flood in the Valley
this year emphasized as never before
the interest of the whole country in the
proper handling of the problem, the im-
portance to the whole country of meas-
ures that will prevent devastating
floods and preserve the Mississippi
River system as a mighty adjunct to
the full commercial development of the
country, and the necessity for the Fed-
eral Government to be the liberal domi-
nating factor in solving the problem.

COTTON GROWING ABROAD.

At the last meeting of the British
Textile Institute, Ernest H. Taylor, in
a paper urging an increase in the
sources of supply of raw cotton for the
English mills, said that it is probable
that within a few years both the United
States and the Continent would each
require 5,000,000 bales a year. His
forecast is nearer fulfillment than per-
haps he is aware, even in spite of his
apprehension. In the year ended
August 31, 1911, the mills of the United

States consumed 4,457,000 bales of
American-grown cotton and the mills
of the European Continent took 3,150,-
000 bales. In the first nine months of
the present season the American mills
have taken 4,592,000 bales, or 135,000
bales more than the twelve months'
takings in the preceding year and Con-
tinental mills have taken 4,300,000
bales, or 1,150,000 bales more than in
the whole preceding year. This in-
crease has followed the decline in the
price per pound of cotton consequent
upon this year's record-breaking crop,
the significance of which seems to be
lost sight of by foreign textile interests
who have for more than sixty years
been agitating, more or less spasmodi-
cally and usually coincidentally with an
advance in the price of American cot-
ton to a reasonable sum, the question
of developing cotton-growing areas in
other lands. On the part of Europeans
this agitation has centered largely in
Great Britain, especially since the time
ten or twelve years ago when South-
ern cotton-growers began to receive for
their crops returns justifying the ex-
penditure of money and energy and the
devotion of 30,000,000 or more acres of
land to raising the crops. Results of
this agitation are indicated in the re-
port of the British Cotton Growing As-
sociation made on May 14 summed up
as follows:

Although some of the ventures undertaken
by the association have been unsatisfactory
and may ultimately have to be abandoned,
on the other hand, the results of the past
year's working in several of the colonies are
more than encouraging. Uganda is now
producing a large quantity of cotton, North-
western Nigeria is at last making real progress,
and in the Anglo-Egyptian Sudan there are
almost boundless possibilities for the future.
These three countries, with the assistance of
Nyassaland and the West Indies, can supply
all the cotton, both as regards quality and
quantity, that Lancashire requires. The
Council are convinced that the position of
affairs today is the most satisfactory since
the inauguration of the work and that large
and important results may shortly be ex-
pected.

The *Textile Mercury*, alluding to this
report says that while the Association
is meeting with difficulties, problems and
rebuffs, it is, withal, maintaining a
cheery optimism and adds:

It is abundantly clear that the association
is making headway, though perhaps "making
haste" slowly. That is not from choice but
from necessity. And the difficulties with
which the work is beset on almost every
hand—though happily some of these are
being removed—cannot fail to be appreciated
to the full by everyone who is at all ac-
quainted with the detailed operations of the
association. Perseverance is a virtue, grit
and determination are most admirable qual-
ities, and the exercise of sound judgment—to
know just when experiments have been car-
ried far enough—is perhaps more important
still. With these qualities well developed in
those who are conducting affairs, the asso-
ciation should meet with its due reward in
the long run. No one who fully recognizes
the fact that experimenting costs money and
that the business of cotton growing is far
from being child's play, will be inclined to
grumble at the rate of progress the associa-
tion is making for the time being, as seen in
visible results; they will be content to look
to the future with optimism—to the time
when the harvest is being reaped and the

Lancashire trade is enriched by an adequate
supply of cotton, assured through the untir-
ing efforts which are now being made to ad-
vance the growth of cotton within the Brit-
ish Empire.

How little seems necessary to fruc-
tify that spirit of cheery optimism is
suggested in the statement of J. Ar-
thur Hutton, chairman of the Council
of the Association, after years of ex-
periment and expenditure, to the effect
that within the British Empire more
than 50,000 bales had been raised last
year, that something like 75,000 bales
will be raised this year, and that, if
climatic conditions were satisfactory,
1913 might show a yield of 100,000
bales.

When the time ever comes in which
the American cotton mills shall be us-
ing 70 per cent. of the American cot-
ton crop instead of exporting it to the
mills of other parts of the world when
the time comes that of the 24,000,000
bales of cotton raised in the South,
16,800,000 bales, about the crop of the
present season, shall be used by Amer-
ican mills, conditions may have de-
veloped in Nigeria, the Sudan, Uganda,
Nyassaland and the West Indies just-
ifying the present spirit of optimism of
the members of the British Cotton
Growing Association, even providing
the world should then be using no more
cotton goods in proportion to population
than is the case now, when it is esti-
mated that, if the rest of the world re-
quired as much cotton goods as does
America, 42,000,000 bales of cotton
would have to be used in the mills in-
stead of 17,000,000 or 18,000,000 as at
present.

But there would be less loss of en-
ergy, if not less actual disappointment,
should the optimism of foreign spinners
take the form of looking to the Southern
States to double their annual cotton
crop and of realizing their hopes by
assuring Southern cotton growers that
it would pay them to double the crop.
The hopes will not be fulfilled if cot-
ton manufacturers act upon the theory
that while a 12,000,000-bale crop may
be worth 14 cents a pound, a 16,000,-
000-bale crop ought to bring only 9
cents a pound. Instead of straining
every point to bear down the price of
cotton to the level where cotton growers
have nothing to show for their invest-
ment, the manufacturers should labor
to extend the markets for their goods
and to educate buyers to pay higher
prices for them. The whole cotton situa-
tion, from growing the staple to selling
manufactured goods, is fundamentally
weak when the original producer is on
the verge of penury.

Fortuitous conditions in the grow-
ing season of 1911 demonstrated in a
most dramatic way the capabilities of
the South in cotton production. The
phenomenal crop was due not merely to
a greater acreage than before and ex-
ceptional weather, but was a re-
flection of better methods of cultiva-
tion following many years of practical
education in that particular. Only a
beginning has been made, however, but

its advantages have been emphasized
sufficiently to impress upon the public
mind the possibility of doubling the
crop without bringing another acre un-
der cultivation. And there are millions
of acres in the cotton belt which are
not yet in cotton.

Of course the South ought not to
be expected to use all of its acreage in
the cotton belt for cotton growing.
There are other crops for which the
world is calling which may be grown
there at a greater profit than cotton
per acre, and the section is naturally
bound to exert itself in the direction
that will bring it greatest returns. The
world ought not to expect the South
to play the part of a pelican in the wil-
derness, to strip itself in order to be a
world-philanthropist.

Therefore, the South will be wise in
applying the most approved methods
for the production of as much cotton as
possible per acre, after seeing to it that
its opportunity for raising its own sup-
plies of food and foodstuffs is not in
the least degree diminished, and then
giving attention to manufacturing. It-
self, as much of its own cotton as pos-
sible for sale to the world. If such a
program does not appeal to cotton
manufacturers in other parts of the
world, the South is prepared to wel-
come the migration to itself of cotton
manufacturing capital that otherwise
would have no occupation.

WEALTH IN THE UTILIZATION OF SOUTHERN WASTES.

Five or six years ago the farmers in
the neighborhood of the plants of two
copper companies in the Ducktown dis-
trict of Southeastern Tennessee, on the
borders of Georgia, were greatly ham-
pered in their operations because of the
injury wrought by the fumes from the
smelters upon vegetation in the sur-
rounding territory. Following an in-
junction by the State of Georgia against
them, the copper companies undertook
to abate the nuisance by disposing of
the fumes. The result is the derivation
from the former waste of the smelters
of material going into the manufacture
of fertilizers for the benefit of agricul-
ture. The plan adopted by the two
companies was the erection of acid
plants, which, as pointed out by F. B.
Laney of the United States Geological
Survey, involved not only the necessity
for handling larger quantities of gas
than had ever before been attempted in
such plants, but also the solution of the
problems of the irregularity in the sup-
ply of gas, variable temperatures, large
quantities of flue dust, and considerable
and variable quantities of carbon diox-
ide gas derived in part from the ores
and in part from the limestone and
coke of the furnace charges. Success
of the plan has had three broad eco-
nomic effects of value.

What was once an absolutely waste
product and a menace to farming oper-
ations is no longer either a waste or a
menace.

It has become the source of a large

supply of sulphuric acid where it is most needed, because the greatest demand for the acid is in the fertilizer industry; the great deposits of phosphate rock now being exploited are in Tennessee, South Carolina and Florida, and the South is using about 65 per cent. of the commercial fertilizers manufactured in the United States, and about two-thirds of the capital of \$175,000,000 invested in this country in fertilizer factories is in the South.

The process of utilizing the fumes has brought it about that one of the companies finds that all the ore from its mines is needed to furnish sufficient gas to keep the acid plant up to full capacity, and that large supplies of sulphur hitherto worthless are rendered valuable, more than doubling the net profit per ton of ore.

The application of this economy to the manufacture of commercial fertilizer suggests another saving of waste in which the South was a pioneer. Until 40 years ago the greater quantity of cottonseed, excepting that used in planting, was regarded as a waste. Experiments in crushing the seed for oil and other products were made nearly 80 years ago in Mississippi, and later at Mobile, New Orleans, Memphis, St. Louis and other points, and, had not the war intervened, the great interest developed in this subject between 1850 and 1860 would have had widely practical results at the time. Interest revived in the seventies, and by 1880 the South was yielding from the cottonseed-crushing industry crude products to the value of \$7,690,921. The annual output of such products—oil, cake, and meal and hulls—is now valued at about \$145,000,000, and a much larger sum is represented in the total of all the products entering into food, clothing, lubricants, illuminants and feed for cattle. Some of the products appear in as widely separated objects as lamp wicks and automobile tires, as dyestuffs and confectionery, as absorbent cotton and explosives, and as soap and salad oil. Some of the products enter into enrichment of the soil, directly in the manufacture of commercial fertilizers and indirectly as feed for stock. The close relations between cottonseed production, stock raising, the packing-house industry, with its wonderful utilization of former wastes, such as blood, bones, horns, hoofs, hides, sinews, trimmings, etc., and the fertilizer industry explain in large measure the tendency of the packing-house industry to make its larger habitat in the South, which, in turn, is encouraging cattle raising there in mitigation of the waste in agricultural operations which often comes through lack of diversification.

Wasteful methods in handling the timber resources of the country have been an influence in making the South the dominant section of the country in lumber production. But the stages of progress now reflected in the South's cutting more than half the lumber of the United States and monopolizing the production of naval stores have been marked by much waste, too. Because of the opportunity to avoid the mistakes of other sections in handling timber resources and because of its importance in the naval-stores trade, the conservation problem as applied to timber supplies has been pressed in upon the South. In working it out upon a common-sense basis two lines have been followed—one for the prevention of waste and the other for the use of formerly discarded material. Something more than 10 years ago Dr. Charles H.

Herty, a professor in the University of Georgia, conducted investigations in the turpentine forests, and found that by substituting for boxing of the pine trees a system of cups and gutters the production of a given number of trees was increased 23 per cent., and in addition that less damage was done to the trees. In a period of two years after his discovery had been taken up by the National Bureau of Forestry the number of cups in use for turpentine increased from 20,000 to 3,000,000, and a pottery company that expected to supply the operators with the earthen cups found itself unable to fill its orders, and was obliged to decline a number aggregating 2,000,000 cups. Meanwhile, attention has been given to the treatment of pine knots and the stumps left in cut-over timber lands, and to the derivation by the destructive distillation process or other methods of turpentine, creosote, tar, tar oil and acid products. Pine shavings are now converted in the South into pulp for the manufacture of paper; it has been determined that, at a cost of \$7, from 3200 pounds of green sawdust may be derived 30 gallons of alcohol worth \$12, 76 pounds of acetic acid worth \$4.56, and three-quarters of a ton of stock feed worth \$17.25—a total of \$33.81. Nearly 40 plants in the South are using the destructive or steam process in obtaining turpentine, tar, charcoal and heavy oils from sawdust, slabs and other mill waste, and from the limbs and stumps of trees, and a \$500,000 plant in Louisiana now under construction will manufacture 5000 gallons of ethyl alcohol a day from sawdust and pine refuse of a nearby lumber plant.

There are about 25,000,000 acres of cut-over timber lands in the South, most of them neglected because of the difficulty presented by the stumps. It has been demonstrated, however, that these lands by proper cultivation may become highly productive, and it is estimated that, with a suitable outfit for the removal and treatment of stumps, the land might yield per acre enough charcoal, turpentine and tar to pay for bringing it into shape for farm operations. The prospect thus widens for the utilization of a vast waste.

There are other wastes in the 53,000,000 acres of wet lands in the South, the far greater part of them not swamps or marshes, but areas high above tide-water, but lying so level for such great distances that the rains settle upon them for quite a while. Their soil is of the richest character and highly productive when reclaimed at a comparatively slight cost by drainage, and some of the drainage operations, ranging from the vast project in the Florida Everglades for the reclamation of territory about equal the area of the State of Maryland to ones of a few thousand acres, are so designed that the land may be irrigated in case of need.

Scientific handling of the forests, including care in the cutting of commercial timber and foresight in providing for reforestation, is making headway, and the movement will be accelerated and expanded in the creation of the great forest reserve in the Southern Appalachians. That project is essentially one of most practical economy, aside from its effect upon the handling of timber tracts everywhere. Its main purpose is the protection of the headsprings of great rivers of the South, which are becoming more and more important as factors in the internal commerce of the country as contributing to its foreign trade. But the adequate handling of

this problem, bringing about maintenance of an equable flow of the streams and the prevention of loss of life and destruction of property by floods, will also conduce mightily to the realization of expectations of the full utilization of the power in Southern streams which for centuries has been wasted. Southern streams today have nearly 10,000,000 horse-power, of which hardly 2,500,000 have been utilized or are in process of utilization for industrial power, heat and light. The project that will result in the maintenance of the steady flow of the streams will also result in the maintenance of the horse-power in them—a vital element to be considered in the light of the enormous demand for power that will come with the full development of the natural resources of the South. And the same project, in its power for the prevention of floods, will co-operate in the reduction of losses in the lower Mississippi and in the simplifying of the problems of the reclamation by drainage of 20,000 or 30,000 square miles of alluvial lands, capable of yielding a greater crop of cotton than has ever been grown in the South.

The South is now producing as much coal as the whole country produced 50 years ago. It has scarcely made an impression upon its original supply of more than 500,000,000,000 tons of coal, but nevertheless wisdom recognizes the importance of mining in such a way as to reduce the waste, now amounting to about half a ton to each ton marketed, to the minimum. There is even thought of consuming coal at the pit's mouth in the generation of electric power, and thus doing away with the consumption of coal in hauling coal to distant points for fuel. Coke-making practice is changing from the old wasteful methods of the beehive ovens to the recovery of valuable elements in by-product ovens. Of the total number of coke ovens in the United States, 104,440 built and 2567 building in 1910, there were 4078 by-product ovens built and 1200 building. The active by-product ovens yielded \$24,793,916 worth of coke and \$8,479,557 worth of by-products, including 27,692,858 cubic feet of surplus gas, that is, the gas not returned for use in making coke, valued at \$3,017,908; 70,247,543 pounds of ammonia sulphate, valued at \$1,841,062; 20,229,421 pounds of anhydrous ammonia, valued at \$1,725,266; 66,303,214 gallons of tar, valued at \$1,599,453, and 4,663,282 gallons of ammonia liquor, valued at \$295,868—a total equal to more than a third of the value of the coke produced. It is estimated that the recoverable contents of the coal used in the beehive ovens in that year would have been worth between \$35,000,000 and \$40,000,000, so that the \$74,846,333 worth of coal used in coke-making in that year would have yielded in the by-product process about \$140,000,000 worth of products instead of \$99,000,000.

Other lines of utilization of wastes may readily suggest themselves, but the few that have been here cited are sufficient to indicate what great additions to the wealth of the South are to come through a general adoption of the policy. The billions of tons of coal, of iron ore and of lead and zinc and copper in the South, the hundreds of millions of lands yet to be cultivated, the vast stretches of forest and the many other resources bestowed upon it by generous nature may make the average mind slow in understanding that prodigality on the part of the giver does not

justify wastefulness in use on the part of the receiver. But it must be remembered that had the forefathers looked more to conservation of soil, to care in mining and in lumbering and a wise economy in their handling of all natural resources there would not be today the slightest apprehension that this country is approaching a period of limitation in the use of such resources. That apprehension will pass with the growth of the purpose to make the most of the vast resources still remaining.

CHAIRMAN LOVETT ON TEXAS RAILROADING.

Texas railroad laws have reached such a degree of notoriety in both transportation and financial circles, and the apprehension they have caused regarding the future of the State is so serious, that any words about them and what ought to be done by the people of that great new Commonwealth would merit consideration. Doubly interesting, therefore, are the utterances of R. S. Lovett, the head of the Hariman lines, who is excellently qualified to speak both because of his railroad information and experience and because he is a native Texan deeply interested in the prosperity of that State. What he had to say upon the subject was voiced at the recent meeting of the Texas Welfare Commission at Dallas.

Everyone at all familiar with the subject knows that many millions of railroad capital have been kept out of Texas by her stringent railroad statutes, especially those regulating the issue of stocks and bonds. But few have realized the magnitude of the harm done and which Judge Lovett makes clear.

That Texas would have had 2,000,000 more population today if her policy toward railroads had been different during the last 20 years is one of his expressed opinions. Another utterance, but a statement of fact, is that while the Southern Pacific spent during the past nine years on its lines west of Texas over \$214,000,000, it spent in Texas during the same period not quite \$19,500,000, or less than one-tenth. It spent in capital expenses West during his administration \$11,065 per mile, but in Texas only \$971 per mile, or less than one-eleventh. He said that the company makes only such improvements in Texas as are necessary, because it does not get any returns on the money. Beyond the building of a short extension from Hearne to Giddings, now under construction, the company has no plans for the development of railroads in Texas. He also remarked that he would rather spend money in Texas than anywhere else in the world, but he was handling other people's cash, and it would be wrong for him to invest it where he did not believe it would have proper protection. He declared that there could not be any material development of railroads in the State so long as the statute referring to railroad securities remains as it is, because it is utterly impossible to finance them under that law.

To illustrate the harm done, he told his audience, which was composed of progressive business men, deeply concerned in the subject of desired railroad facilities, that the late E. H. Hariman some years ago proposed to build a railroad of easy grades from a connection with his Union Pacific line at Kansas City to Denison, Tex., connecting there with his Houston & Texas Central road to reach the Gulf. But

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the latter would have had to be improved at a cost of \$15,000 per mile to correspond with the new road across Oklahoma, and the Texas law would not permit bonds to be issued for the improvements. It blocked the plan, and the connecting line between the Harri-man roads on the north and those of the same system on the south was never constructed. He also directed attention to the rate-making policy of the State Railroad Commission, which he said was another deterrent to the investments in Texas railroads.

Chairman Lovett's remarks should command the attention and thoughtful consideration of everyone in Texas. Rigid regulation of transportation companies came about there after a large number of people deemed the common carriers guilty of extensive abuses in rates and service. Stress was laid upon the financing of railroads, and allegations were made that stock and bond issues had been liberally watered, rates being imposed with respect to the volume of securities demanding dividends or interest, respectively. As might have been expected, the Legislature overdid the thing in passing an act to satisfy the people, and both railroads and public are now suffering from its enforcement.

One thing which Mr. Lovett insists upon is that transportation rates are not controlled with reference to securities sold; also that railroads should be allowed to issue bonds at par for re-funding or likewise for construction debts. These are some of his sugges-tions for the making of a new law to remedy existing conditions. Sentiment in favor of an equitable change is already aroused in different quarters, and his temperate and well-chosen words about what ought to be done for the correction of the present evil will doubt-less have much weight with prominent and far-seeing business men, who realize that their welfare and the welfare of Texas are practically one and the same thing.

SOUTHERN PHOSPHATE ROCK.

Between 1901 and 1911 the produc-tion of phosphate rock increased from 1,483,723 long tons, valued at \$5,316,403, to 3,053,279 long tons, valued at \$11,900,693. There was an increase in production in 1911 over 1910 of nearly 400,000 tons. The following table com-pares the production based on the quan-tity marketed in 1910 and 1911:

States.	1910.	1911.
Florida.....	2,067,507	2,436,248
South Carolina.....	179,659	169,156
Tennessee.....	398,188	437,370
Total.....	2,645,354	3,042,774
United States.....	2,654,983	3,053,279

Phosphate mining began in this coun-try on a commercial scale in 1867 in South Carolina, and since then 39,640,810 tons of rock, valued at \$162,329,275, have been marketed. Of the total South Carolina has marketed 11,200,074; Tennessee, which began to produce in 1894, 6,483,983 tons, and Florida, which came into the market in 1888, has sold 20,371,290 tons. Prac-tically all of the phosphate rock mined in the country has been produced in the South, the figures of Tennessee in-cluding a small production in Kentucky and Arkansas.

How much phosphate rock remains in the South cannot be estimated. Last year there was prospecting in a new field in central Kentucky, which it is thought may become a considerable producer, and, in the same year, in-vestigations in a field embracing parts of Idaho, Wyoming and Utah became

the basis of an estimate that the field had a productive capacity of 2,500,000,000 tons. Exhaustion of the South-ern fields is not likely to occur shortly. But when it comes the Western fields will probably be more accessible, so that no one need dread a possible lack of a supply of phosphoric acid in this country.

FOR WEST VIRGINIA FARMING.

The Baltimore & Ohio Railroad has ap-pointed Mr. James H. Stewart agricul-tural agent of the company. His special work will consist of developing the agri-cultural interests of the Baltimore & Ohio system, particularly in West Virginia; of inducing immigration; aiding in the diver-sification of crops; advising agriculturists and horticulturists as to methods and crops best adapted to their soil; co-operating with State and Federal authorities in the development of the region tributary to the system, and explaining to other sections of the country the possibilities existing in the territory under his charge. He will also co-operate with the industrial department in its efforts to locate industries along the Baltimore & Ohio.

Mr. Stewart comes to the Baltimore & Ohio fully equipped, both by experience and knowledge, to render invaluable ser-vice in the duties assigned to him. His splendid work as director of the West Vir-ginia agricultural experiment station was largely responsible for awakening the peo-ple of the State to the peculiar adapta-bility of its soils and climate for fruit growing, dairy farming, truck raising and the splendid opportunities available in in-tensive farming.

As a result West Virginia is raising some of the finest apples and peaches grown in America; the Ohio River Valley is becoming a veritable truck garden, and throughout the State, in its fertile valleys, coves and tablelands, agricultural and hor-ticultural crops are flourishing, dairy farming is steadily increasing, and gen-erally West Virginia has been brought to a realization that it possesses in these re-sources opportunities for development that in every way match the industrial opportunities lying in its vast supply of coal, natural gas, petroleum, timber, lime-stone, glass sand, shales, clays, etc.

The special attention which the Balti-more & Ohio Railroad has been giving to West Virginia, as reflected in the millions of dollars it is spending upon its roadbed in that State; the wide publicity it has given to the industrial opportunities in the section traversed by its line, and the new agricultural department that has just been created will prove of incalculable benefit not only to the section traversed by its own line, but to West Virginia as a whole.

THE COTTON MOVEMENT.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cot-ton Exchange, the amount of cotton brought into sight during the first nine months of the present season was 15,047,275 bales, an increase over the same period last year of 3,538,175 bales. The exports were 10,082,357 bales, an increase of 7,179,039 bales. The takings were, by Northern spinners, 2,252,789 bales, an in-crease of 248,201 bales; by Southern spin-ners 2,338,859 bales, an increase of 257,363 bales.

The reports of officers and committees of the Chamber of Commerce of Dallas, Tex., for the past calendar year have been published in attractive pamphlet form set-ting forth clearly the many and successful activities of the body, which has more than 1200 members, and throwing much light upon the progress of the city.

Notes by the Way in Dixie.

Whether the "Atlanta spirit," which has achieved such wonders in Atlanta, has been carried from that city to Clearwater, Fla., by some of the Atlanta people who are so fortunate as to be among the owners of winter homes there, or whether Clear-water has on its own accord developed a spirit in proportion to its size that rivals the Atlanta spirit may be immaterial. It is, however, interesting to note that Clear-water in proportion to population can match Atlanta in the spirit of doing things. Atlanta, with a population in the neighborhood of 165,000, raised \$60,000 in three days as a guarantee fund for the Metropolitan Opera. Clearwater, with a population of 1500, in three hours raised \$7000 as a bonus to the County Commis-sioners with which to purchase a lot as a site for a new courthouse. Clearwater having recently been made by vote the county-seat of Pinellas county, there was some opposition on the part of another town to the election, and so Clearwater, which had learned to do things, promptly raised \$7000 and bought a beautiful lot and presented it to the county, and the Commissioners undertook the immediate construction, at a cost of \$5000, of a tem-porary courthouse. In four days from the time work was begun the frame was up, the house was under roof, weather-boarded and floored, and it was expected that the building would be opened for court uses within seven or eight days from the laying of the cornerstone. If this spirit is not a pretty good match, the size of each place being considered, for Atlanta's spirit, I don't know where to find a suitable com-parison.

Clearwater, having made this move, hav-ing recently spent \$40,000 to \$50,000 on water-works and a sewerage system, pro-poses to issue about \$40,000 of bonds with which to begin a brick-paving campaign.

The town lies along a high bluff over-looking Clearwater Bay, a beautiful body of water separated from the Gulf by a mere fringe of land, broken here and there by channels which permit the passage of good-sized boats. This bluff stretches along the shore line for several miles, and presents a picture of rare beauty. In fact, the houses along the bluff might properly be called "millionaires' row," so many are the millionaires who have their winter homes there. It is now proposed by the town to build a boulevard along the water-front immediately at the foot of the bluff. The intention is to build a retaining wall and pump in from the bay sufficient sand to fill in, and thus make a boulevard stretching along the coast. It is hoped that the owners of the Bellevue Hotel, a property which rivals in beauty the Gar-den of Eden which Flagler has created at Palm Beach, will aid the town in a con-tribution of this work in order to make a boulevard four or five miles long.

Some 15 to 20 miles northward from Clearwater, and connected with it as with Tampa by an exceptionally well-made road which for motoring is almost the equal of many of the best motor roads of the coun-try, is Tarpon Springs. Its history is as interesting as that of Clearwater. Clear-water is the outcome of the brain-work of Colonel Tate of Memphis, who 20 years ago as a railroad president saw the possi-bilities of the coast at Clearwater as a winter residence for the people of the North and an all-the-year-round residence for those who might be fortunate enough to make their permanent home there. When he started the town the lots on the main business streets, which now sell for \$5000, sold for \$125. What Colonel Tate

saw in the future as to Clearwater and what is now being fulfilled, Hamilton Dis-ton, the great saw maker of Philadelphia, a quarter of a century ago saw in what is now Tarpon Springs. Disston in one of his trips to Florida became impressed with the fertility of the soil of the Everglades. He proposed a plan for draining 1,000,000 acres. In his study of the State he saw that Tarpon Springs offered an exceptional opportunity for winter homes. In fur-therance of his plans he organized the Lake Butler Villa Co. He secured some thousands of acres in and around the great spring where the kingly tarpon had disported himself and had given to the place the name of Tarpon Springs. Here he planned to make a winter resort for his wealthy Philadelphia friends. The situa-tion was as ideal as the heart of man could desire. Disston's plan was a good one so far as Tarpon Springs is concerned, but his engineers badly advised him as to the method of draining the Everglades. After spending great sums in the drainage work and finding that the enterprise was ahead of the times, and that the project involved too much even for his fortune, he aban-doned the Everglade work. The town of Tarpon Springs, however, continued to grow. Many wealthy people from the North and West sought it as an ideal spot for the building of attractive winter homes, and its sheltered river courses, pro-ected by high bluffs from the Gulf storms, made it an especially attractive place for the lovers of yachting. Later on the sponge divers of the Mediterranean found that on the Gulf coast a few miles out from Tarpon Springs there was a great field, the largest known of sponges. In the Mediterranean much of the sponge diving is at a depth of 150 feet, which produces a very heavy pressure on the sponge fishers. In the Tarpon Springs section sponge fishing is carried on at a depth of 30 to 40 feet only. The extent of the field and the shallowness of the water as compared with the Mediterranean sponge region caused a rush of Greek sponge fishers to the Tarpon Springs sec-tion, and this has now become the center of sponge fishing in America, if not the largest sponge-producing section of the world.

A Greek colony numbering about 2000 to 2500 has been the outcome. Most of the Greeks are living a short distance from the town proper. They are considered a great help to the community. They are law-abiding, hard-working, and have de-veloped a sponge industry which amounts to about \$750,000 annually.

A year or two ago two or three leading business men identified with banking and business affairs of Tampa purchased the Lake Butler and Tarpon Springs interests of the Disston estate and added to these holdings until now they have 50,000 or 60,000 acres of land. They are operating under the name of the Tampa and Tarpon Springs Land Co. Their work promises to have an important bearing upon the growth of Tarpon Springs and all the ad-jacent territory.

Clearwater and Tarpon Springs are illustrations of many thousands of cases in manufacturing, in railroad and in town building enterprises which farseeing men 25 years ago undertook to carry out. Some of these enterprises were in advance of the time, and now other men are taking up and carrying forward on a larger scale the work of the men of vision who 25 years ago projected them. Hamilton Dis-ton failed to make a success of his Ever-glades project, but the State of Florida, with a larger command of capital, with

Notable Factors in the Industrial and Commercial Development of South Carolina's Capital City

[Special Correspondence Manufacturers Record.]

Columbia, S. C., June 3.

In 1786 the General Assembly of South Carolina decided that having the capital at Charleston, where it then was, "was productive of many inconveniences and great expense to the people of this State," and by statute changed it to "a tract of land two miles square, near Friday's Ferry on the Congaree River, including the plain of the hill whereon Thomas and James Taylor, Esqs., now resided." In this way was the city of Columbia established. The

The success of the commission form of government has probably been as noteworthy here as anywhere else in the country. But of that more later on.

The city lies on high, rolling ground, where the Broad River tumbles over a 36-foot fall before changing its name to the Congaree, thus forming the site for a great water-power, which has proven to be the basis of a considerable portion of the city's prosperity.

The location is one of great natural

by its disastrous sequence, the war between the States. On February 17, 1865, the city was visited by a terrible conflagration, following its occupation by Sherman's army, 1300 houses being destroyed, representing in value and importance three-fourths of the city. The fire swept 124 squares, and on Main street for a mile north of the State Capitol but one building escaped.

The war was followed by a period of debauchery in government which, while high

came to them, as they come to all communities that strive, but the successes have been the more numerous in the long run, until now, strong, triumphant, determined, Columbia stands upon a level of accomplishment beyond the reach of those backsets against which she had such a hard struggle. This is true of the city as regards both municipal and commercial affairs.

Following the regain of control of the municipal government by those who had



MAIN STREET LOOKING NORTH FROM CAPITOL.

town was laid off and the land necessary for streets was bought by the State, which still holds title, though acts since passed have given the municipality such use of and control over the streets as it was necessary for it to have.

For several years the town was governed by commissioners appointed by the State, and it was not until 1805 that laws were enacted bestowing upon the people of Columbia the power to run their own municipal affairs, the idea being in the beginning to give it a government like that provided for Washington by the National Congress. After more than a hundred years Columbia about two years ago returned to the commission form of government, the difference being that the governing body is now chosen by vote of the people, whereas it was formerly appointed by the Governor.

beauty, and the city was beautifully laid off, the "squares" being actually square, the streets straight and 100 feet wide, except in the case of a few, which are 150 feet. In the residence portion there is a border of trees along each side of the streets, and most of them have rows of trees in the middle. These things make Columbia most attractive.

Many things have occurred to distinguish Columbia, making it one of the cities of interest and importance in the growth and development of the republic. Here was held the famous nullification convention of November 19, 1833, and the convention of April 26, 1852, and here assembled December 17, 1860, in the Baptist church still standing, the convention which later at Charleston passed the ordinance of secession, which was rapidly followed

taxes were wrung from the impoverished people and a large debt piled up, wasted the revenues and left no permanent improvements, so that when the government of the city was finally restored to the friends of the city it was in a well-nigh hopeless condition—its treasury bankrupt, its credit ruined, and nothing to show for either.

But the courage of the South Carolinians was always indomitable. Impoverished, but undismayed, as soon as they regained control of their own affairs the people of Columbia set about the work of rebuilding their city, re-establishing their credit, rehabilitating their commercial and industrial enterprises and going forward hopeful and unafraid to the place in the front rank of progress that once was theirs. Successes and discouragements

the welfare of the city in mind and at heart, Columbia struggled along under a cumbersome and unwieldy government of the old style, with a large governing body made up of numerous aldermen and commissioners of one kind or another, so dividing duties and responsibilities that both economy and efficiency were rendered impossible, as they have been impossible in many cities under the same kind of government. From the time when the people of Columbia adopted the commission form of government, some two years ago, and placed their municipal affairs in the hands of five men—a mayor and four councilmen—all salaried officials, employed to make the management of the city's affairs their business, each with his special duties and unescapable responsibilities, economy and efficiency in administration, have

taken their place in all departments, and the effect has been an inspiration felt in every part of the city's life.

Without issuing bonds, raising the tax rate or increasing property assessments, the commission has inaugurated and is carrying on a system of street paving and other public improvements of a permanent character that will soon put Columbia abreast of the most up-to-date cities of the country. There is now being spent in these improvements from \$150,000 to \$200,000 a year more than was ever spent in that manner under the old system. A curious feature of the matter is that some of the men now controlling city affairs were members of the governing body under the old system, and were then just as honest, as earnest and as sincere as now, yet they were unable to get such results as are now easily obtainable. As an illustration of the difference in accomplishment then and now it is pointed out that during the last year of the old cumbersome government streets were improved for 39 blocks—shaped up and surfaced with sand and clay—at a cost of \$13,389, while under the new regime 166 blocks were given the same treatment for \$17,426. In the neighborhood of \$400 a block under the old, a little more than \$100 a block under the new.

The commission is now having done a large amount of paving of the very highest class. Vitrified brick, creosoted wood block and bitulithic are the kinds being laid, and each upon a foundation of five inches of concrete. Two miles or more of this pavement will be laid this year. Meantime the fire department has been improved, other departments are kept at the top notch of efficiency, and in the interest of health a city abattoir is being erected at a cost of \$30,000, which sum has been provided. And all this, mark you, without issuing a bond, raising the tax rate or increasing assessments. The men who are thus conducting the city's affairs with such signal success claim no credit for it personally, but give all credit to the system. Of course, it takes honest effort, sincerity and devotion to the public interest to accomplish such results, but they seem to have been impossible of accomplishment formerly, no matter how honest, how devoted or how energetic the men in control.

The \$850,000 bonded indebtedness which the city has been carrying at 6 per cent. was recently refunded at $4\frac{1}{2}$, and so high is its credit now that the refunding bonds sold at a premium. The fact that the present government is on a cash basis, whereas formerly there was a floating indebtedness carried almost continually, may have had something to do with putting the city's credit up to its high mark, or it may not, I do not pretend to say; but I do know that the men to whom I have talked since coming here are unanimous in the opinion that the commission form of government, as it is being administered now, is one of the best things that ever came to Columbia.

I cannot but believe that much of the spirit of optimism with which the people of Columbia are now imbued, much of the progress the city is now making, must be accredited to the grand work being done, and possible to be done, by the men now in charge of its municipal affairs, and to the charter which gives them the power and holds them to the responsibility. But be the causes what they may, and as many as they may, the fact is undeniable that Columbia is enjoying a season of industrial and commercial development far beyond anything familiar to its past, and certainly not far short of the visions of its most hopeful and optimistic sons.

This development is being made manifest more particularly just now along the building line, and before the passing of

another twelvemonth a number of stately and costly structures will rear their crests against Columbia's already beautiful skyline to evidence the faith of the people in the future of their town. Some two or three years ago the National Loan and

Exchange Bank put up Columbia's first skyscraper, a handsome 12-story building that has since been the pride of the people. The same bank will shortly put up, adjoining this building, a 22-story structure of steel and brick, finished and fitted

in the most complete style for business rooms and offices. The building will not be carried to its full height the same way as its first 12 stories, the upper stories being in the form of a tower, but sufficiently large to make it available for offices.

Directly across the street from the National Loan and Exchange Bank's building the Palmetto National Bank is about to begin the construction of a 15-story building, the exposed fronts of which will be of white glazed terra-cotta. This will be a very handsome, showy structure. The first floor will be occupied by the bank itself, and the upper floors will be arranged for offices, the plans contemplating 13 rooms to the floor.

Adjoining the building it now occupies the Union National Bank is erecting a 10-story building, fronting 26 feet on Main street and 103 feet on Gervais, and with an L extending 56 feet from Gervais. This building will also be of white glazed terra-cotta. The lower floor will be used for a banking-room and for the transfer offices of the street railway, and the upper stories will be divided into convenient sizes for offices.

These buildings will all be fitted up with fast elevators and such other conveniences as go with office buildings of strictly modern types. Their completion will furnish Columbia with somewhere near 500 new offices.

Adjoining the National Loan and Exchange Bank is a beautiful arcade building just completed by the Equitable Real Estate Co. of Columbia at a cost of \$135,000. The structural parts of this building are of concrete and steel, and the exposed ends of white glazed terra-cotta. It is two stories in height, the lower rooms being taken by business concerns of various kinds, the upper floors by the Columbia Club, a social organization, and a number of offices. This is one of the most attractive buildings of its kind to be seen anywhere in the country. It was finished ready for occupancy only a few days ago, and is practically all occupied now.

A building for the Y. M. C. A. is just now being completed at a cost of \$135,000. It is six stories in height, and built along the most approved lines for structures of the kind. The first two floors will be used for gymnasium, offices, reading rooms, etc., and the four above will be divided into sleeping rooms, of which there will be 84. The structure is of brick and steel.

At the northern end of Main street, just across from the postoffice, is being erected a handsome hotel, to be known as the Jefferson. It is intended to be a strictly up-to-date hotel building in all its appointments, and will unquestionably add greatly to the comfort and convenience of visitors to Columbia, for though there are several good hotels here now, there are times, even when there seems no special occasion for it, when they do not provide sufficient room to supply the demand.

At the southern end of Main street, near the union station, the Gresham Hotel is being built by the interests that run a number of hotels and eating-houses at various points in the two Carolinas. It will be six stories in height, and thoroughly modern in every respect.

A short distance north of the city limits the Lutheran church has but recently finished a beautiful structure for its theological seminary at a cost of \$47,000. It is built of a light gray stone, and presents a most attractive appearance from its site upon a slight eminence just above the roadside.

Other buildings recently completed or in course of construction are a \$36,000 store building at the corner of Main and Taylor streets; a \$16,000 store building opposite the postoffice; 11 storerooms on Washington, a Lutheran Sunday-school building



YOUNG MEN'S CHRISTIAN ASSOCIATION BUILDING.



PALMETTO NATIONAL BANK.



GROUNDS AND BUILDINGS OF THE UNIVERSITY OF SOUTH CAROLINA.

costing \$15,000, a Baptist church costing \$13,000 and a handsome Sunday-school building adjoining the old Baptist church on Hampton street, mentioned above as the meeting place of the secession convention; also the city abattoir referred to aforetime.

A number of apartment-houses have recently been built and are now all occupied, while the demand for buildings of the kind is so insistent that plans are being matured for the erection of others of much greater size.

Along with these there are being built scores of residences. I looked through the books of the building inspector the other day and counted the permits issued during the past six months. They average considerably more than one a day. It is estimated that the buildings to go up this year will aggregate a cost of \$2,000,000. The estimate seems low rather than high.

The searcher for cause has not far to look when he undertakes to discover one upon which to base this recent acceleration of growth and enterprise in Columbia. South Carolina, before the Civil War, stood above all the other States save one in the matter of per capita values as shown by the assessors' books, Connecticut alone being higher. Owing to circumstances too well known to make even a hint of them necessary here, this State became the plaything of political conditions that decimated its property values and paralyzed its progress and prosperity—stripped it to the bone. Not only did it impoverish those who formed the citizenship of the State at the time, but with felonious fingers it picked the pockets of the future to the extent that men then unborn now feel and for many years must feel its blighting effect. It was years before the State began to recover, and it is only lately that the full impetus of the forward movement has been felt throughout its borders. But once the upward start was made—the wheels set going in the right direction—the movement has grown stronger, more rapid, until its momentum is now irresistible, and nothing can stop or stay it. The oft-tried South Carolina courage, the buoyant and unflagging spirit of other days, again animates the people, the immeasurable riches of natural resources have reasserted themselves, and the proud old Commonwealth is marching forward to resume its position near the head of the column. Columbia naturally bears an important part in the State's progress, and will reap largely of the prosperity that promises to be as permanent as it is now unmistakable. A glance at the map will reveal some of the potent reasons for this.

Columbia occupies a position very near the exact geographical center of the State, and is the natural business axis and distributing point for a large portion of it. This advantage of geographical location has been greatly enhanced by the manner in which railroad lines have been made to radiate from the city, until it is claimed that any county in the State can be reached from here in the short space of 4½ hours. The railroads are the Sea-



CAPITOL OF SOUTH CAROLINA.



BAPTIST CHURCH WHERE SECESSION ORDINANCE WAS PASSED.



COLONIAL TYPE OF DWELLING.

board Air Line, the Southern, the Atlantic Coast Line and the Columbia, Newberry & Laurens. The trunk lines of the three

great systems mentioned pass through Columbia, branching out here and carrying in nine different directions, putting the

city in communication with practically every part of the State, and with all the great centers of population, trade and industry throughout the entire country as well. The roads have excellent facilities here for handling their business, and are adding to them as the demands of traffic suggest. The Columbia, Newberry & Laurens road is a short but busy line to the northwestern part of the State, and an excellent feeder for the business of the city. This line has its southern terminus here and maintains here its general offices, employing a considerable number of people who make their homes here, and whose money finds its way into all the arteries of the city's trade. The passenger trains arriving and departing on all these roads total 68 daily, a number that is just about equaled by that of the regular freight trains coming and going, and closely approximated by the special freights.

An important adjunct to the transportation facilities furnished by the railroads is the line of boats plying between here and Georgetown. In former years the Congaree River and the Santee, formed by the junction of the Congaree and the Wateree, furnished the highway upon which the major portion of Columbia's commerce was carried, coming and going, and the business done by the boat lines was of great importance in the life of the community. With the advent of the railroads the steamboat business fell away, and commercial navigation of the river, so far as Columbia was concerned, was wiped out. Lately, however, a boat line has been re-established, and now two steamers are employed in the trade between this city and Georgetown, the seaport at the mouth of the Santee. These boats carry considerable freight, which is increasing in amount as the people become accustomed to that manner of shipment, and it is expected by those at the head of the enterprise that a business of such proportions will be built up finally that the river will be so improved by the Government as to make it navigable by boats of high power and great carrying capacity, thus giving Columbia direct connection, by a fast water route, with the great seaports of the country, vessels from which now visit the wharves at Georgetown. The boats now in use are freighters exclusively, having no accommodations for passengers. There is much land of wonderful fertility lying along the banks of the Santee, and the opening of the river to important navigation would develop a great agricultural section that would aid powerfully in the growth of the State and the upbuilding of this city.

The part borne by the river in the present commercial life of the city is, however, but small in comparison to that it bore beforetime in the same way, and that it bears now in another way. Before the days of steam railroads South Carolina undertook the development of the waterways of the State upon a broad and comprehensive plan. By a system of canals built around the rapids it was attempted to render navigable for light-draft boats a



OLYMPIA COTTON MILLS.

number of streams from the sea far up into the plateau lands of the western and northern portions of the State. Several million dollars were spent in the undertaking, and it would doubtless have proved successful but for the discovery of the practicability of applying steam engines to the transportation of heavy freight by land, and with such rapidity that waters in which the slow process of locking and damming for the use of small boats was necessary could not compete for business. As it was, South Carolina was quick to recognize the value of the new kind of transportation, and it was in this State that the first steam railroad was built and operated. Thus passed the usefulness of the canals constructed by the State at the expenditure of so much money, in so far as concerned the purpose for which they were intended. But the one constructed here for the purpose of affording passage for boats around the falls by which the Broad River descends 36 feet as it passes along the city's boundaries was not allowed to be a loss to the community, but has become instead one of the chief assets of the city, a prime factor in much of its greatest, most enduring prosperity.

In 1868 the State's property in this canal was transferred to former Governor Sprague of Rhode Island, who undertook to improve it, with the intention to create power for sale. This was, of course, before the day of the application of electric current to the driving of machinery, and the idea was to sell water rights to such concerns as could locate their plants on the banks of the canal and use the water by direct connection. After spending \$100,000 in the improvement of the canal, Governor Sprague was forced by the financial crash of 1873 to abandon the project. The canal then went into other hands, and after a while the State took it back and made some attempt to finish the work undertaken by Sprague, but allowed it to drag along, and it finally fell to the city to take it in hand and complete it, which it did through the medium of a board of trustees. Later the city transferred it to a Boston syndicate, which installed the original electric plant, and it afterwards passed into the hands of the Columbia Electric Street Railway, Light & Power Co., which still owns it. From the water of the canal is now generated the electric current that lights the city of Columbia, runs its street-car system, drives the machinery in all the cotton mills of the city and furnishes power for many other users, large and small. Most of this



JEFFERSON HOTEL.

power is generated by the company's own turbines and carried over its transmission lines to the users, but in at least two cases, those of the city water-works and the Columbia Duck Mills, the users purchase water rights and manufacture their own power.

Two notable and valuable features in the development and application of electrical energy were early adopted here. The Columbia Duck Mills, owned by the Mt. Vernon-Woodberry Cotton Duck Corporation, when being built contracted for the use of a certain amount of water from the canal, the intention being to use water-wheels directly connected with the mill machinery in the old and usual way. Before the mill was completed, however, successful experiments demonstrated the fact that electricity could be used for driving machinery, and the plans were changed and electric motors installed. In 1895 the Granby Cotton Mills people decided to try driving the wheels of their mill by transmitted electricity. The current was generated at the canal and carried by wires to the mill a mile away. Thus was first demonstrated the fact that it was not necessary that the mill should stand within belt-reach of the power-generator. The thousands of miles of transmission wires now used in the Carolinas and the hun-

dreds of thousands of miles in use elsewhere are the sequents of the mile first strung in Columbia. A third notable undertaking is the Olympia Mills, all under one roof.

There is now developed from the water in the Columbia canal, by the owning company and the concerns which have water rights, about 7500 kilowatts, equal to 10,000 horse-power. The company, however, has secured from the State the right to take the necessary steps to increase its development by 15,000 horse-power, making a total of 25,000. It will probably carry out this project in a short time, especially should the promise of immediate purchasers for the current warrant the expenditure of the great amount of money necessary for the work. This company has already added to its hydro-electric development an auxiliary steam-driven plant with a capacity of 4500 horse-power.

The cotton-mill industry has been for a good many years a big factor in the life of Columbia. There are now in operation here eight mills, with 243,388 spindles and 5830 looms, employing an average of 3051 people and paying wages aggregating \$830,553 annually. The capital invested is \$5,377,500 and the annual output is valued at \$4,307,210. These mills consume 51,175 bales of cotton annually.

They make fancy lawns, cotton duck, print cloths, shirtings, twills, rope and twine.

It were a needless task, surely, to undertake demonstration of the fact that Columbia offers unusual inducements to those desiring to engage in the manufacture of cotton. The power is here, as has been shown, and for sale cheap; the raw material grows all over the South in such plenty that the surplus, and two-thirds of it is surplus, must needs seek a market overseas. Here it may come direct from the gin, lacking heavy freight charges, and without whatever percentage of cost and deterioration, if any, the immense weight of the compress entails. The mills that have for years pursued their business here have built up a manufacturing population that solves the labor problem; living conditions are pleasant and economical; transportation facilities are all that could be asked or desired. All the requisites meet here—none is wanting.

But while cotton seems to present the most natural subject for industrial activity, it is by no means the only one, and, in fact, pays out less than half the wages paid by manufacturing plants here, and turns out less than half the product, measured by value. Other manufacturing establishments here swell the total of capital invested to \$10,298,888, the value of the output to \$10,760,596, the number of employes to 5188 and the annual payroll to \$1,830,630.

These plants are engaged in turning out cottonseed products, bakery products, brick and tile, confectionery, electricity, fertilizers, iron and brass foundings, machinery of various kinds, lumber and timber products, monuments and other forms of cut stone, ice, mineral and soda waters, books, newspapers, periodicals and other products of the printing press, saddles, harness, tobacco, cigars. There are numerous other industrial occupations, employing many people and paying out many thousands of dollars, which are not listed here, and of which no account is taken in the summary of figures, but which add largely to the total product, the total wage and the total prosperity.

Nor do these figures, taken from the 1911 report of the State Department of Agriculture, Commerce and Industries, fairly represent the strength of some of the lines mentioned, as there have been a number of new plants built since the figures were compiled. This is especially true of fertilizer factories, of which two have been put in operation since the publication of the report. The increase in the number of concerns doing business in Co-

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Columbia has been especially rapid during the last six months, the combined capital of those chartered by the State being at least \$500,000, most of them running in amount of capital from \$5000 to \$10,000 each. These cover a wide range of enterprises.

There are excellent opportunities here for success for manufacturing plants of many kinds, among them those to make agricultural implements, furniture, brooms, mattresses, beds, crates, boxes, hampers, baskets, compound lard and other cottonseed products, overalls, trousers, handkerchiefs, embroidery, laces, shirts, hats, shoes, wagons and buggies, soap, cigars, brick, terra-cotta and tile, mixed stock feed, dairy products, flooring and hardwood finishings, tents and awnings; for cotton-waste mills, knitting mills, bleachery and dye works, foundries and machine shops.

The ease with which the raw materials for most of these things can be assembled here, the cheapness with which power can be procured, and the unexcelled facilities for distribution throughout a scope of country in which there is a large and growing demand for the products insure the success of any such concern properly capitalized and intelligently managed.

Columbia also does a very considerable wholesale business, having 36 jobbing houses, besides being headquarters for a number of merchandise brokers and manufacturers' agents whose annual sales total large. These houses handle groceries, dry goods and notions, drugs, provisions, cigars and tobacco, hardware, stoves, house furnishings, packing-house products, fish and oysters, machinery, oils and petroleum products, candies, fruits, grain, hay and feed. Their trade lies throughout a very wide expanse of territory easily reached by reason of the advantageous railroad connections. There are still good openings for wholesale houses in various lines.

An element that enters largely into the manufacturing and wholesale business of every city is that of banking facilities, for concerns engaged in large transactions, whether of making or buying and selling, must needs be situated where they can be sure of proper lines of credit for handling their business. This requirement is fully met in Columbia, for the strength of its banks is one of the best of its many attractive features, not alone with respect to the influence they may have upon the future, but as showing the great prosperity of the city at present and the wonderful strides it has made in the immediate past. In 1902 the banking resources of Columbia were \$3,556,600; in 1907 they had increased to \$7,502,000; in 1912 they have reached an aggregate of \$12,093,000.

While Columbia grew from 15,353 population in 1890 and 21,108 in 1900 to more than 26,000 in 1910, as shown by the census, the figures by no means show the real population of the city, for there are numbers of people living in the mill villages and other suburbs who, while they do not count in the census, nevertheless count largely in the commercial and industrial strength of the city. However, the growth shown by the figures is gratifying, because it has been accompanied by a still greater growth in business and prosperity.

Columbia enjoys the possession of an excellent street-railway system that has been much improved and greatly extended during the past few years, and which is being carried into the outlying territory as rapidly as business demands or prospects warrant. The work of improvement and extension has been done under the direction of John G. White & Co., the well-known New York engineers, a guarantee that it has been properly done. The extension of its lines and the satisfactory



COLUMBIA COTTON DUCK MILL.



LUTHERAN THEOLOGICAL SEMINARY.

service rendered by the street-railway company has had telling effect in building up the city's suburbs, and in that way building up the city.

Another matter of much importance to Columbia and the entire State is the revival in agriculture that has recently come, and continues to come, from the adoption by the farmers of scientific methods of cultivation, combined with the system of diversified cropping. South Carolina has for many years been a large purchaser of corn and other necessary farm supplies, and has annually sent to other States millions of dollars to pay for such supplies that could not only be grown inside the State, but could actually be grown cheaper than in those States from which they were being purchased. The organization of corn clubs throughout the State and the impetus given the growth of that grain through enlisting in the proper methods of its production the interest of the boys of today, who are the men of tomorrow, has had great effect, not only in bringing about the production of a much larger amount of corn, but in directing attention to the value of a general crop diversification. The Chamber of Commerce of Columbia, an enterprising organization of enterprising men, has done much to further the movement for better farming by offering prizes to be given out through the corn clubs and by other acts of encouragement.

A thing that shows the spirit that has been aroused in Columbia and throughout the State is the National Corn Show, which is to be held in this city next January. When Columbia's representatives asked for this big undertaking the managers told them it would require a guarantee fund of \$40,000 to secure it, and that the guarantee must be made by a certain time. "All right," said the Columbians, "we'll be on hand at the time with the guarantee." And they were. So the great show will be held here, and its ultimate value to South Carolina, and the South generally, will be written in millions of

dollars, instead of the thousands that had to be guaranteed to get it.

The Chamber of Commerce, with an eye to the further stimulation of corn growing, and of securing to their city as much as possible of the advantage to come from it, is discussing plans for a big elevator here that will make Columbia the chief corn market for a very large part of the State's corn-growing territory.

Columbia presents many points of attraction as a place of residence that will have much influence upon its growth in future. Prominent among these are its fine educational advantages. It has an excellent public school system which keeps step with the most advanced methods of education practiced in the popular schools throughout the country, and enjoys in addition the advantages conferred by being the location of the State University, a school that has for years held a high position among the best in the land, and which has sent out in its graduating classes many men who have distinguished themselves in the various walks of life, not only in this State, but in the country at large and throughout the world. The Columbia Theological Seminary, maintained and directed by the Presbyterian Church, the Columbia College for Women, Columbia College, another school for women; St. Peter's parochial school, under the management of the Ursuline Sisters; Ursuline Convent and Academy, under the management of the Ursuline Sisters—all these are schools of high rank, and each is performing a great work in preparing young men and young women for the part they are to take in the world's activities. The colored race is represented in the matter of higher education by Allen University, Benedict College and other excellent schools.

In the matter of churches all the important denominations are well represented, having handsome church edifices and large and devoted memberships. The influence of these churches is manifest in

the distinctly moral atmosphere that pervades the city and the good order that universally prevails. It is a city of homes, the beauty of whose exteriors is only equaled by the glowing beauty of the life within and the generous hospitality that greets the stranger at the door.

One especially noticeable thing crops out all along the history of progress made as it presents itself to the student of Columbia's affairs, and that is, that the big things that have been done and are being done are the work, for the most part, of the city's own sons—descendants of the men whose names adorned the history of South Carolina in her glory's time—and that though they have learned to accept new conditions, and to work by modern methods, it is by the abatement of no jot or tittle of veneration or respect for those who gave their State its place of imperishable renown upon the pages of the history of the republic.

They erect monuments to those heroes of other days, and while they strive unceasingly for the more abounding prosperity and the greater glory of their beloved Commonwealth, they burn daily incense at the shrines of those who have loved and served and sacrificed.

GEO. BYRNE.

The Horine Developments.

Prof. W. M. Hunley, University, Va., writes to the MANUFACTURERS RECORD as follows:

"The stone-crushing plant on the property of the Horine Development Co., 25 miles from Chattanooga, in Walker county, Georgia, will be in operation July 5. The Allis-Chalmers Company, Milwaukee, has about completed the installation of the following machinery:

"No. 21 style 'K' Gates breaker; two No. 6 style 'K' Gates breakers; 60-inch by 20-foot Gates iron-frame revolving screen, with dust jacket; two sets 40x15-inch Anaconda crushing rolls, with rolled steel shells; 18x36-inch Allis-Chalmers belted type Corliss engine; 400-KVA. 600-volt type 'AH' belted generator, with exciter; 10 550-volt induction motors for driving crushing-plant machinery, sizes being one 200 horse-power, two 40 horse-power, three 30 horse-power, one 75 horse power, one 10 horse power, one 7½ horse-power and one 50 horse-power; 7½-KV. lighting transformer.

"The No. 21 breaker has two receiving openings of 42x114 inches and weighs approximately 450,000 pounds. The output in tons, if operated to capacity, would be from 550 to 650 tons per hour. It requires from 200 to 300 horse-power to operate. The Horine Company recently closed a contract with one Southern concern for 150,000 tons of crushed stone for concrete, and it will supply several concerns in the Chattanooga district with fluxing rock.

"The completion of the crushing plant will be followed immediately by the installation of a Portland cement plant to cost nearly \$1,000,000. Then the Southern Calcium Phosphate Co. will erect its fertilizer factory on the Horine property and will use ground limestone as a filler. This will complete, for the present at least, the Horine development at this point. The Horine Company owns 6200 acres of land, containing more than 300,000,000 tons of lime-rock above water-level, according to Dr. T. Poole Maynard, the geologist who examined the property. Ellis Soper of Chattanooga is engineer in charge of construction. J. H. Hill of Chattanooga will be manager of the plant, and Dr. Maynard, James Building, Chattanooga, will continue as consulting geologist."

BIRMINGHAM IRON MARKET.**The Trade Inclined to Conservatism as to Engagements.**

[Special Cor. Manufacturers Record.]

Birmingham, Ala., June 1.

The movement from furnace yards was somewhat lighter in the last half of May than in the two weeks preceding, but without returns in hand it is estimated that the aggregate accumulation of foundry grades and of basic iron is some 15,000 tons less on this date than on May 1. A smaller production for May than for April will be shown, owing to the change of operations at one plant, whereby the daily output was reduced some 200 tons. As stocks were reduced some 25,000 tons during April, the showing just outlined would indicate a smaller consumption for May than for the month previous, but when consideration is given to the territory into which May shipments were made, an improvement in general conditions is indicated.

A basis of \$11 per ton at Birmingham for No. 2 foundry, for delivery through the third quarter, has been firmly established. Certain brands are being quoted at \$11.50 per ton for the delivery mentioned, and \$11.25 per ton for No. 2 soft has recently been paid for a number of small lots where immediate shipment was required. For the last quarter a basis of \$11.50 per ton is quoted by those concerns who are solicitous of such business, without a special effort to secure orders. As has been previously stated, the trade is disposed to follow a very conservative course in the matter of engagements at the higher figures, and as a result the tonnage on order-books for shipment after the third quarter is still small, comparatively. It is probable that considerable tonnage sold for shipment in the third quarter will have to be carried over into the last quarter at the instance of the seller, just the same as some tonnage sold for delivery in the first half will be carried into the third quarter; but, of course, the proposed increase in the number of active furnaces will have to be taken care of. The volume of inquiry for advanced delivery that is pending is very liberal, although not in definite form in the majority of cases. A lot of 5000 tons of foundry grades will probably be placed by a pipe manufacturer during next week, and negotiations for 1000 tons of analysis iron for export are under way. For this last none of the several producers appear particularly anxious, owing to the nature of the specifications and the price offered. With the exception of the lots just mentioned, the business in sight consists principally of the requirements of the smaller foundries, which usually involve early delivery. The largest sale reported for this week was a lot of 1000 tons of analysis iron for third quarter shipment, which brought a price very close to \$12.50 per ton. A fair tonnage of carloads and lots of 500 to 750 tons each was sold, for which \$11 to \$11.50 per ton at furnace, depending on the requirement and delivery necessary, was received. No mention whatever has been made of deferred shipments by the purchasers, and it is not believed that the tonnage being received is being stored. The recent revision of freight rates to certain quarters of the trade will no doubt increase the movement from local furnaces to such sections, although the extent to which the consumption in those sections will be increased by reason of the lower rates remains to be seen. The grades represented are quoted as below for spot shipment and delivery in the third quarter, with an advance of 50 cents per ton over

those figures quotable for last quarter deliveries:

No. 1 foundry, \$11.50.
No. 2 foundry, \$11.
No. 3 foundry, \$10.50 to \$10.75.
No. 4 foundry, \$10 to \$10.25.
Gray forge, \$9.75.
Mottled, \$9.50.
Basic, \$10.50 to \$11.

Warm blast charcoal iron, \$22 to \$22.50. Manufacturers of cast-iron water pipe will soon be called upon to bid on some 65 miles of 8, 10, 12 and 16-inch pipe, which is in addition to other requirements for which specifications have been submitted. Of the most recent lettings, the requirements for Oklahoma City was the most significant, but the small orders placed in the week are attractive in the aggregate. All plants report a heavy movement during the month of May, with a material reduction in stock accumulations. It is understood that a further advance in asking prices will be made about July 1. For small orders being placed the market is very firm as follows for class "B," or water pipe, per net ton f. o. b. cars here, viz.: Four-inch to six-inch, \$23.50; 8-inch to 12-inch, \$22.50; over 12-inch, average \$21.50, with \$1 per ton extra for class "A," or gas pipe. Special fittings are quotable at from \$45 to \$50 per net ton at foundries.

A continued strong demand for structural steel is reported, while practically all local equipment is being operated on full time in the production of bar and round iron. The movement of wire products is fair, notwithstanding the unsatisfactory conditions existing in some of the Southern territory. Several small lots of light rails were sold in the week, although the requirement of such material has been affected more or less by the curtailment of mine operations. New steel rails in 12-pound to 30-pound sections, inclusive, are quoted at \$1.25 to \$1.30 per hundred-weight in carload quantities f. o. b. cars at Birmingham.

The old material market is very active, comparatively. Within the week quite a satisfactory tonnage of light cast and machinery scrap was sold, while orders for heavy scrap and for boring and turning were taken from the Northern market. The local mills, together with the requirement at Chattanooga and Atlanta, have taken care of all wrought and steel grades recently offered to quite an advantage. Old car wheels are being moved promptly, and there is but a small accumulation of old iron and steel axles. Dealers' asking prices are quoted nominally as follows per gross ton f. o. b. cars here, viz.:

Old iron axles, light, \$15 to \$15.50.
Old steel axles, light, \$12 to \$12.50.
Old iron rails, \$11.50 to \$12.
No. 1 railroad wrought, \$11.50 to \$12.
No. 2 railroad wrought, \$11 to \$11.50.
No. 1 country, \$7.50 to \$8.
No. 2 country, \$7 to \$7.50.
No. 1 machinery, \$9 to \$9.50.
No. 1 steel, \$9.50 to \$10.
Tram car wheels, \$8 to \$8.50.
Standard car wheels, \$11.50 to \$12.
Light cast and stove plate, \$6.50 to \$7.

Local operators do not report a larger movement of steam coal, and the asking price for spot deliveries is still very weak. Contract specifications for the coming season are being submitted by the compress and cotton oil operators, and negotiations for the requirement of two Southern railway systems are under way. The movement from Kentucky fields into Southern territory is practically normal, which, of course, displaces certain tonnage from Alabama fields. Foundry coke is still very firm, a further advance in prices having just been announced by a Virginia operator who furnishes considerable tonnage in this territory.

Recent reports are to the effect that the repairs under way at the furnace plant of the Chattanooga Iron & Coal Co. are being rushed to completion, and that the furnace will probably be ready for operation by July 1 next. It is understood that for some months after the commencing of operations the necessary coke supply will be furnished from the Whitwell, Tenn., ovens of the Tennessee Coal, Iron & Railroad Co., which will be put in blast at a very early date. The Chattanooga company proposes the construction of by-product ovens, but it is not known just when this work will be commenced. The ovens of the Tennessee Coal, Iron & Railroad Co. at Whitwell, referred to above, have been idle for some 18 months.

MISSISSIPPI NAVAL STORES.**Rapidly Developing Industry on the Gulf Coast.**

[Special Cor. Manufacturers Record.]

Pascagoula, Miss., May 25.

The manufacture of turpentine and resin on the Gulf coast of Mississippi is yet in its infancy. Though the manufacture of naval stores has been carried on in South Mississippi for more than half a century, it has always been in out of the way places or in the piney woods, far away from the main streams of commerce. The products when ready for market have been hauled to the railroads in ox teams or double mule teams, and some times they have been brought a distance of 20 miles or more to the shipping point on the railroad.

It is only lately that the turpentine man has, in obedience to economic laws, moved his still from the depths of the forest and entered the purlieus of the towns. A few weeks ago Messrs. Kracke and Flanders of New Orleans, who have near Laine, Miss., some 11,500 acres of cut-over pine lands, established a turpentine camp some three and one-half miles from this city, under the management of Mr. W. L. McWhite.

The first thing a turpentine man must procure, when he has not sufficient land of his own, is the timber rights, which he does by leasing from the owner of the land the right to farm his land and for which he pays so much a "box," ranging from 3 to 10 cents. Some times two or three boxes may be put in one tree, but there is generally only one. Some years ago anything under 12 inches in diameter was not boxed, but the writer has lately seen trees that were boxed which could hardly have been more than four inches in diameter, mere saplings. Thanks to the experiments and campaign of education carried on by the United States Agricultural Department, the old way of boxing, cutting a deep cup in the trunk of tree near its roots, has been abandoned, and now terra-cotta cups with troughs are fastened to the tree which receives the "gum" from the wound made in the tree and by this method something like one-third of the product is saved which formerly was wasted. Another advantage that this newer method has is that it lessens the losses by forest fires. Careless or designing persons often go through the pines and set fire to the dry grass in the winter time, which, spreading rapidly, and the flames coming in contact with the boxes in the pines filled with the highly inflammable turpentine gum, not only destroys the gum that is in the box and renders the box useless, but very often will burn deeply into the tree, weakening it so that it readily yields to the first gale that blows.

Mr. McWhite informed the writer that 10,500 boxes would yield the first year 60 barrels of turpentine and 180 barrels of resin; the second year they would yield 40 barrels of spirits and 120 of resin, and the third year 30 barrels of spirits and 90

of resin, and so on until the timber at length becomes exhausted. He estimates that the 11,500 acres of the Biltless plantation can be "cropped" for 12 years.

The prices of the product, of course, vary, but they will average \$22 per barrel for the spirits and about \$12 per barrel for the resin. Of late years the prices of naval stores have shown a tendency to advance, as is shown by the following trade quotations on turpentine f. o. b. Savannah, Ga., for the last week in April, viz.: In 1908, 43.42 cents; 1909, 36.83 cents; 1910, 59.43 cents; in 1911, 74.25 cents.

While watching the still discharge its streams of molten resin I gathered a lesson as to the importance of conserving all waste material of every manufacturing plant. The cotton batting through which the resin is strained is thrown into heaps, and when enough has been collected it is sold for \$20 per ton, while the pieces of bark, pine cones, chips, etc., are carefully collected and sold. Without being cautious I could not help reflecting on "the burning slab pile" that one may see near every sawmill in South Mississippi, and which annually consumes thousands upon thousands of cords of useful material.

According to the estimate of Mr. W. J. Cummings of Detroit, Mich., the waste material or 1 per cent. of every sawmill is chemical-yielding cordwood which will, if properly handled, yield a profit of \$10 per cord. The writer has before him the statistics of the port of Pascagoula for the year ending December 31, 1911, showing that 194,599,000 feet of lumber were manufactured and shipped from this port, 1 per cent. of which would be 19,459.90 cords of chemical-yielding cordwood, which, at \$10 net per cord, represents the sum of \$19,459,900 that went up in smoke during the year of 1911. Ten years ago the writer in an editorial in the Pascagoula *Chronicle* called attention to this enormous waste and suggested that it could be turned to a source of profit. But it did not receive a passing notice. This waste has been going on for years in the South, and especially in South Mississippi, and will probably continue for years to come, or until the National and State Governments enact stringent laws restricting banks in lending their funds to manufacturers who cannot or will not conserve their assets. The present policy of waste is, as a witty Frenchman once said, "worse than a crime, it is a mistake." CHAS. E. CHIDSEY.

South Carolina Drainage.

Mr. Lawrence Manning, president and general manager of the Manning-Hoghes Company, Charleston, S. C., writing to the MANUFACTURERS RECORD about the Black and Boggy Swamps Drainage District in Hampton, S. C., says:

"Survey for a general drainage system for this district will commence about July 1 and will be in charge of Mr. F. G. Eason, United States drainage engineer, Charleston, S. C., as assistance will be given this district by the office of drainage investigations of the Department of Agriculture in connection with survey for the general drainage system. I, as engineer for the district, will work in conjunction with Mr. Eason, so as to embody his report in the complete report of the board of viewers. Survey was completed March 30 by Mr. Eason in conjunction with myself as engineer of Buffalo Drainage District No. 1, Cleveland county, North Carolina, and the report will be completed in about 30 days."

It is estimated that 14,000 acres of land in Charleston county, South Carolina, will yield this year truck crops valued at \$2,562,500, netting \$1,302,500 to the growers.

Tallulah Falls Power.

By RICHARD W. EDMONDS.

The construction of the plant at Tallulah Falls, Georgia, planned to develop 90,000 horse-power, is now well under way. The chief features are two dams, the tunnel, the forebay, the power-house and the switchhouse.

One of the dams, a storage dam, is about eight miles upstream from the other. Work on it has not even started yet, but it is to be 90 feet high, 650 feet long, and

Condon, Graham & Milner have the contract for the tunnel and forebay. The intake end of the tunnel is about 50 yards from the dam. The tunnel is now about one-half or two-thirds finished. It is to be 6660 feet long, 12 feet wide at the widest point and 14 feet high at the top of the arch. It will have a concrete lining about 12 inches thick. Thirty-five water-line air drills, made by the J.

George Seyner Engineering Works, which was recently bought out by the Ingersoll-Rand Company; 25 Sullivan piston air drills, Seyner stopping drills for trimming off the walls of the tunnel, and five Seyner bitt-making machines are in use. The International High-Speed Steel Co. of New York city furnishes about 5000 pounds of drill steel per month. Cars from the Gustafson Car & Foundry Co. carry the rock out of the tunnel, and three derricks and one elevator, operated by both Lidgerwood and National hoists, lift the rock to the four crushers. Three

of the crushers are from the Knoxville Iron & Foundry Co. of Knoxville, Tenn., and the other crusher and three sand rolls are from the Sturtevant Mill Co. of Boston.

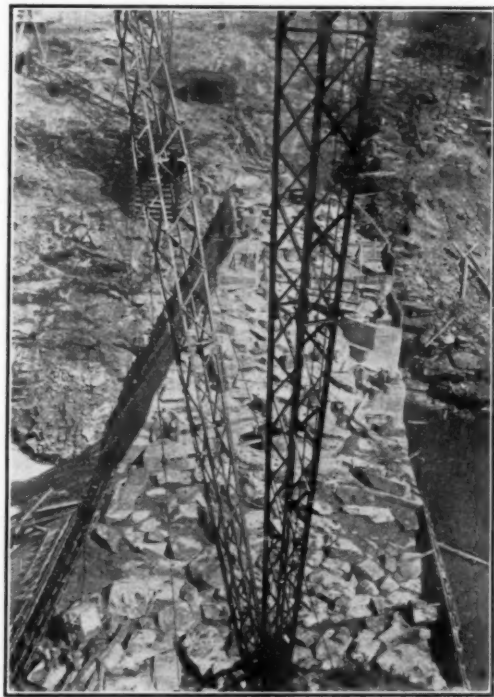
The sand is all made from the rock from the tunnel. The cement, Dixie Portland, is bought through the R. O. Campbell Coal Co. of Atlanta. The screens and elevators for the crushers are from the W. J. Savage Company of Knoxville, Tenn. Roebling's wire rope is used on the derricks. The Crane Company of Atlanta has furnished about seven miles of



VIEW OF DAM FROM DOWN-STREAM, TAKEN MAY 15, 1912.



VIEW OF DAM FROM UP-STREAM, TAKEN MAY 16, 1912.



PART VIEW OF STEEL DERRICK AT WEST END OF DAM HANDLING ROCK AND CONCRETE PASSED TO IT BY THE DERRICK AT OTHER END OF DAM.



TEMPESTA FALL, ONE OF THE SERIES OF FALLS AT TALLULAH; HEIGHT, 76 FEET; TAKEN AT A DISTANCE OF ABOUT ONE HUNDRED YARDS.

will impound a billion and a half cubic feet of water.

The lower dam, which is being built by the Hardaway Construction Co., is about two-thirds finished. It is of the cyclopean type of masonry. A quarry that supplies all the rock used is just below the dam. Ingersoll air drills are used in the quarry. The large rocks are placed on the dam by one of the three steel derricks made by the American Hoist & Derrick Co. The smaller rock is carried by one of the derricks to the Allis-Chalmers crushing and mixing plant, where all the sand used in the dam is made from the rock. The sand and crushed rock are mixed with Dixie Portland cement and carried to the dam by a derrick. Power for the derricks and the crushing and mixing plant is furnished by a Walsh & Weidner's boiler and Reeves boilers. Sack steel cable is used on the derricks.



QUARRY BELOW DAM FROM WHICH MATERIAL FOR THE DAM IS TAKEN.

pipe, of from one to six inches diameter. All copper wire and electric supplies are from the Atlanta branch of the Baltimore Electric Co. and the Knoxville Electric Co. of Knoxville, Tenn. Lubricating oil is from the Gulf Refining Co. of Atlanta. The Blaw Steel Centering Co. of Pittsburgh, Penn., will furnish the 160 feet of steel form for the lining of the tunnel. Beck & Greg Hardware Co. of Atlanta and S. P. Luttrell of Knoxville, Tenn., furnish all general supplies, and a locomotive crane, made by the Browning Engineering Co. of Cleveland, O., is used for switching and unloading.

The same company is the contractor for the forebay, which will be 30x70x93 feet deep and lined with concrete. Six steel penstocks carry the water down the side of the gorge, a drop of 600 feet in 1000 feet, to the power-house.

Excavation for the power-house is now

going on. It will be 48x192 feet, built of brick, steel and concrete, and the switch-house will be 50x250 feet and built of the same materials, Hardaway Construction Co. being contractor for both.

Each penstock will drive one S. Morgan Smith 15,000-horse-power turbine, each turbine being direct connected with a 10,000-kilowatt three-phase 60-cycle generator, which gives a current of 6600 volts. The generators are made by the General Electric Co. The current is stepped up to a line voltage of 110,000 volts. The line poles are made by the American Bridge Co.

Air for the drills and electric current are furnished by the Northern Contracting Co., which operates a temporary plant having the following equipment: Two 2500-cubic-foot Laidlaw-Dunn-Gordon compressors, made by the International Pump Co., and driven by a 1100-horse-power S. Morgan Smith water turbine; one 200-cubic-foot compressor, driven by a 100-horse-power turbine of the same make, and one 2000-cubic-foot compressor, driven by three 150-horse-power Scotch marine boilers, made by Walsh & Weidner, and a generator, driven by the small turbine.

A car of 50 tons capacity will run down an inclined track to the power-house. It was made by the Mead-Morrison Company, and is operated by a 50-ton double-drum hoist, also made by Mead-Morrison Company.

The whole development will cost \$10,000,000 or \$11,000,000, and will be finished in about a year.

Tallulah Falls, long known as the Niagara of the South, is one of the most beautiful falls in the South and one of the greatest in the whole country. The development under way, estimated to obtain 100,000 horse-power for transmission by electricity to Atlanta, Cartersville, Rome, Gainesville, Lagrange and other Georgia cities, is one of the largest single hydro-electric developments in the country and probably the largest of the kind next to Niagara. The Georgia Railway & Power Co., which is making this development, is a \$57,000,000 corporation in which well-known Northern and Southern men are interested, as well as Canadian and English capitalists.

STATUS OF DRAINAGE BONDS.

Their Investment Value from a Banker's Viewpoint.

In the recent address at New Orleans upon the desirability for investment of district drainage bonds under an act sustained by the Supreme Court of Louisiana, Mr. S. A. Trufant, a leading financier of New Orleans, after sketching the history of levee bonds, said:

"In the eighties, when the various levee districts first issued their bonds, they had the same difficulty in finding buyers for them that the drainage district bonds have found up to the present time, and if my recollection serves me right, some of those levee bonds sold as low as 80 and 85. They were finally listed on the stock exchange on the 17th of May, 1893, and the quotations of that date show that they were selling at 90 to 97. Some of these bonds were bearing 5 per cent. interest, and some were issued to bear 6 per cent. interest. If you refer to the stock exchange quotations of today you will find that the Atchafalaya Levee District has an issue of \$850,000 maturing 1949, bearing 5 per cent. interest. The last recorded sale of this bond was March 19, 1910, at 110.

"The Lafourche Basin Levee District has an issue of \$500,000 maturing in 1954, bearing 5 per cent. interest. The last sales were at 100%.

"The Orleans Levee District has outstanding \$3,000,000 at 5 per cent. The last sales were at 100.

"This ought to be sufficient to establish my point that confidence and credit are purely a matter of education. A market was created, and these levee bonds have gone into the strong boxes. There is very little trading in them now.

"If the time granted me were longer, I should be glad to go back and review the early banking history of this State and prove to you conclusively that the State of Louisiana has always loaned its credit to build up its agricultural resources. The early history of the State, from 1820 to 1850, reads like a fairy tale. Bank after bank was chartered under the policy of the State to build up its agricultural resources by loaning its credit to the banks, endorsing the bonds of the various banking institutions, secured by mortgage, which bonds were sold in Europe always at a price above par, and the proceeds brought to Louisiana, were under compulsion, by act of charter loaned to the planters on the basis of 50 per cent. of the appraised value of his property holdings. In some cases the State followed the precedent established by the United States Government and became partners or stockholders in these great financial institutions.

"In the period from 1836 to 1842 the paid-in capital of the banks of New Orleans, \$38,000,000, was larger than the paid-in capital of the banks of New York. At the present time the population of the State of Louisiana is 1,685,000. We have 240 banks, State and National, with a total paid-in capital of \$31,421,672, and total resources of \$186,228,618. The number of banks in the State of Louisiana confining themselves strictly to savings bank business is only 9; the total number of depositors in these banks is 59,754, amount of deposits \$16,826,000 and the average deposit \$281.58. These banks are all stock banks. We have no mutual banks in this State, and since there is no law segregating savings deposits, the statistics are not available to show how many National Banks, State banks and trust companies are receiving savings deposits in the State of Louisiana, and what they amount to, but confining the comparison of statistics to the banks which are either mutual or stock savings banks, Louisiana has a larger number of depositors in her savings banks than any other Southern State, and the total amount of savings is larger than any other Southern State excepting Virginia. Virginia tops us with \$19,956,000 and an average deposit of \$321.67.

"I introduce these statistics to show that we are essentially an agricultural country, and, therefore, the banks in Louisiana are not in a position to carry any large amount of fixed investment. The sugar planter, under an unwritten law, replants about one-third of his crop every year, and usually his effort is to try to get at least one-third of what he is going to plant in the ground in October before he gets busy taking off his crop. Now, you will recognize that what money he gets in the ground in October is not available until the next crop is harvested in November the following year, or 13 months. The sugar crop is harvested during the three months November, December and January, and the planter calculates to get the balance of his plant cane in the ground during February. Then begins the steady work of putting all his money into the ground in the cultivation of the crop. The same thing is true of the rice planters and cotton planters, although the period is not so long. While we have a plethora of deposits in the earlier months, the banks in New Orleans always have to rediscount or borrow money to take off the rice, cot-

ton and sugar crop, which comes to market in September, October and November; in other words, the country takes care of itself until they get a good stand, then they borrow what the storekeeper and the country bank have. They pay cash to their wholesale grocer for a few months in the year, and then they have to close their account with a note payable "when the crop comes in." When we have to make a loan to a bank in the country we realize that it is absolutely impossible for that bank to pay that loan until the harvest takes place in their neighborhood, and the prudent banker who loans \$50,000 to \$100,000 to a county bank also has in his mind that if that bank wants a little more money they must have it to get back what they have in the ground.

"The banks of Louisiana will certainly do their part to create a market and in buying these issues of drainage district bonds, but they will only be able to buy them to resell to investment company, life insurance and savings bank. The following statistics show the investment buyers:

	Savings banks.	Depos.	Amount.	Average.
Mass....	192	2,138,838	\$791,931,542	57 \$370 26
Conn....	87	587,175	284,807,844	63 485 04
R. I....	17	143,145	75,459,963	11 527 15
N. Y....	141	2,957,650	561,168,449	10 527 84
Ohio....	66	253,646	89,290,872	17 351 91
Iowa....	697	497,209	168,068,098	53 337 99

"It is a very significant fact, one that is quite new to me, that the agricultural State of Iowa has such a large savings deposit. That is what immigration and land reclamation will do for Louisiana. It is very evident that the people who will be the final and last buyers of these bonds will be the savings banks and life insurance company."

One View of Mississippi Flood.

Albert L. Grace of the Grace Realty Co., Plaquemine, La., in a letter to the MANUFACTURERS RECORD says:

"Just a few lines to give you some idea of the high-water situation in South Louisiana and the future prospects in the overflowed section. About one-third of the farm lands in this section have been covered with water—this includes Iberville, Pointe Coupee, Assumption, West Baton Rouge, St. Martin and Iberia parishes. The water will perhaps remain on these lands sufficient to destroy the present crops of cotton, cane or corn and truck; however, it will recede in plenty of time to plant late corn, cotton, watermelons, sorghum, peas, soy beans, etc., and will be in the best and finest condition for an abundant fall crop of Irish and sweet potatoes, turnips, beets, cabbage and other truck.

"Whilst the flooding will prove a great loss and setback to the planters, the great benefit to the fields from sand and sediment is a big asset and will make lands now yielding three crops per year more fertile than ever. The farmers driven out by the back waters are fast returning to their homes to begin their 1912 crops.

"Whilst a very small portion of the lands of Louisiana were covered with the flood waters of nearly 30 States, the extreme high stage of the water has demonstrated what a vast quantity of water the present system of levees can hold within bounds, and except for the breaking of two undersized and somewhat overlooked embankments, the different levee boards would have come out victorious.

"In this particular section the annual rainfall is 60 inches, and divided rather evenly according to months—and statistics will show that there is no portion, especially in the lower Mississippi Valley, subject to droughts—and we dare say that this section will bear close inspection to the effect that we get an abundance of rain and moisture, and that it is nicely divided, there being no dry and no wet seasons. We are in hopes that the United States Gov-

ernment will soon assume its just burden; that is, the maintenance and care of the Mississippi levee system, and that the taxes now being paid for that purpose might be utilized in bringing forward the rich lands so long overlooked. The overflowing of a part of this district has in no wise scared the wise man or the investor who knows. This is evident by the great number of anxious land prospectors now in Louisiana."

Little River Drainage.

Alfred L. Harty, Bloomfield, Mo., writing to the MANUFACTURERS RECORD regarding the Little River drainage district, says:

"The district is a territory 90 miles in length, north and south, and about an average of 10 miles in width, formed under the drainage laws of Missouri and governed by a board of supervisors elected by the landowners. This district is a part of territory of seven counties in Southeast Missouri. The district was incorporated more than five years ago, and at the present time all of the suits, either on jurisdiction or assessment, have been settled with the exception of one landowner and two railroad companies and the board of supervisors, of which I am a member, now believe that we will be able to commence the improvement during the year. The benefit to Southeast Missouri of this enterprise cannot be foretold, but we have already drained thousands of acres of land in that country successfully, and this proposition is absolutely an assured success. We have had for consulting engineers Mr. Isham Randolph of Chicago, and both Mr. Morgan and Mr. Elliot, Government engineers. When this work is completed it will redeem and make ready for clearing and placing in cultivation more than 550,000 acres of very valuable soil. The character of the soil in this country is as a general rule black sandy soil, with almost perfect underground drainage. The country in this present condition is covered with a very heavy growth of timber. The most valuable part of same has already been removed. Prices of the land are within the reach of anyone desiring a home, ranging from \$25 to \$50 per acre in the raw state. When cleared and put into cultivation any of this land will be worth more than \$100 per acre."

Sugar-Cane for Florida.

Reclamation work in the Florida Everglades, now rapidly advancing, makes especially timely a pamphlet by R. E. Rose, president of the Florida State Agricultural Society, containing the texts of his address before the society on the possibilities of sugar production in the State, an article by him on cane culture and syrup making, and a sketch of the history of the Disston sugar plantation at St. Cloud, the latter designed to correct erroneous and misleading reports as to the cause of the abandonment of that enterprise after several years of phenomenal success. Professor Rose says that sugar-cane is successfully grown in all the counties of Florida, and that while south of the 27th parallel of latitude, Florida cane reaches its full maturity annually, the largest acreage and most numerous fields of it are in the northern counties. The soil best adapted to the cane is well drained, low hammock, swamp or bottom land, and Professor Rose says that no heavier, richer crops have been produced in any country than has been grown on the drain saw grass, marsh lands of Florida, lands identical in every way physically and chemically with the saw grass muck lands of the Everglades, which, when properly and perfectly drained, will produce maximum crops of sugar-cane at minimum cost.

Texas City's Increasing Importance in Transportation and Commerce.

[Special Correspondence Manufacturers Record.]

Texas City, Tex., May 31.

With the completion of a new pier and two new warehouses, to be ready September 1 of this year, the terminal facilities at the new port of Texas City will enable 25 oceangoing vessels to berth here at one time. The total cost of these facilities will then foot up about \$5,000,000.

So complete are present facilities that Texas City shows the remarkable growth in commerce of an estimated value of \$100,000,000 for the year ending December 31, 1912, as against less than \$1,000,000 in 1904, while in cotton handling the increase has been even more amazing. Beginning with 30,000 bales for the cotton year 1900-10, the first year the port appeared as a candidate for cotton export business, the next year showed an increase to 300,000 bales, and already, with the third year not ending until August 1, the shipments have gone so far above 500,000

assurance that the present development is merely the beginning of a vastly greater growth that is to be. If there were never to be an Isthmian Canal, and if the great Southwest were as completely developed

of the globe. Indubitably every harbor served by the Galveston Bay channel will receive a great impetus in growth by the expansion in trade which will follow the Panama Canal opening, and by the devel-

there had to be a great city on the lakes, and Chicago was forced into being by the requirements of trade of a large and rich section. In the territory tributary to Galveston Bay there is only one-fifth as many people as in Chicago's territory, while there is here an area of twice as much land. Extending 300 miles to the east, 300 to the west and 500 to the north is a territory rich as can be found, only partially developed as yet, which belongs to a metropolitan city on the Gulf coast of Texas. Here railroads meet the ships of the sea, which come to dock under their own steam. The Government has already improved and maintains a channel 25 feet deep and 150 feet wide at the bottom, and appropriations have been made for a 30-foot channel from Texas City to the sea. Furthermore, surveys have been made and plans are before Congress which will give every harbor on the Galveston channel a depth of 35



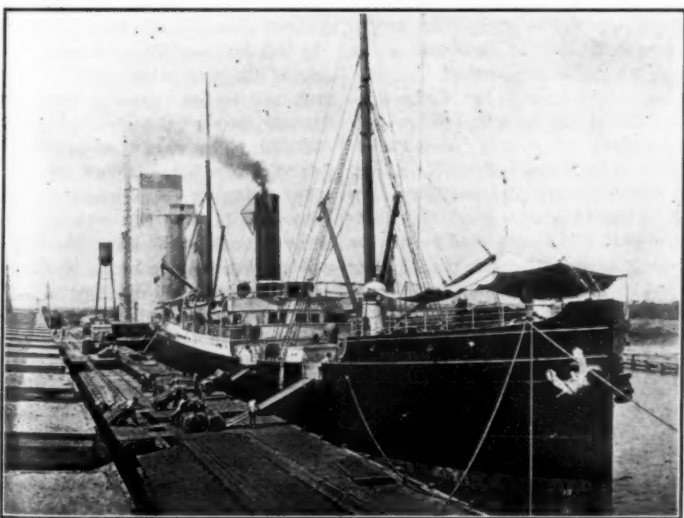
FIRST PIER BUILT AT TEXAS CITY AND THE FIRST BOAT TO LAND.



LOADING COTTON AND LUMBER AND UNLOADING IRON.



RAILROAD TRAVELING CRANE LOADING COTTON.



HARRISON LINE STEAMER LOADING COTTON FOR LIVERPOOL.



REINFORCED CONCRETE GRAIN ELEVATOR OF 500,000 BUSHELS CAPACITY.

bales that a total of at least 600,000 bales for 1911-12 is considered a certainty. This brings Texas City up to fifth port as to cotton exportation, being surpassed only by Galveston, Savannah, New Orleans and Norfolk, in the order named, and it need be no surprise if she climbs still farther toward the first in the immediate future.

Facilities for the expeditious and economical handling of cotton, as well as all other commerce, is the keynote of Texas City's phenomenal rise, and is also the

as the territory tributary to Chicago, the terminal facilities at Texas City would draw trade to it by that irresistible magnet of commerce—economy in time and cost of handling freight. When every element in the situation is considered, however, it is not difficult to understand the faith of the Texas City founders in a condition which will make of the present facilities merely an initial unit, to be duplicated and reduplicated until there shall be here one of the really great seaport cities

of the Southwest. There are those identified with the Texas City enterprise, however, who foresee a preponderating benefit to come to this place, and their reasoning runs thus wise:

Great cities come into being through the requirements of sections, States and nations for a trading center, and their size and importance depend on their facilities for economically and expeditiously assembling and transporting articles of commerce to the widest world markets. Thus

feet. Then within two years the Intercoastal Canal will be finished, so that Galveston Bay, in addition to feeders like the Trinity, Neches and Sabine rivers, will have the benefit of an artery reaching from the Mississippi to the Rio Grande. On this canal one gasoline engine can barge 1000 tons of freight between New Orleans and Brownsville, nearly 1000 miles, and as a commerce feeder for deep-sea ports the Intercoastal Canal is certain to become a factor of importance.

Then Texas City is on the mainland, seven miles or so across the bay from Galveston. The shore line is a stretch of bluffs, and the natural ground is 12 feet above the level of the Gulf, which insures it immunity from high tides and storms. There is chemically pure artesian water here for domestic and steam purposes. The water-works system installed is fed by wells that flow above the ground.

The Texas City Terminal Railroad connects with all the railroads entering Galveston—the Galveston, Harrisburg & San Antonio (Southern Pacific system); the Gulf, Colorado & Santa Fe (Santa Fe system); the Trinity & Brazos Valley (Hill road); the International & Great Northern (Gould system); the Missouri, Kansas & Texas, and the Galveston, Houston & Henderson. Through the Belt Line at Houston, the facilities of all the other lines entering that city are available. In Texas City the Terminal road has now some 25

the development of the town has been in charge of the Texas City Company, practically identical interests being behind both companies, with Captain Wolvin at the head.

There was at first a single wharf with a frame warehouse. The pier has been widened by filling in until it is now 1000 feet wide and 1400 feet long, affording 3600 feet of deep water dock frontage. The original dock warehouse, of wooden construction, 80x1122 feet in dimensions, is still utilized for the loading and unloading of various articles of merchandise, its long wharf front making it possible for three vessels to berth at one time and be served from the warehouse simultaneously. Ultimately this building will be replaced by one of strictly fireproof construction, in harmony with every improvement which has been put in within recent years.

Ranged along this main pier, side by side, are the other dock warehouses, C, D



TWO-AND-A-HALF-TON LIFTING MAGNET IN OPERATION.

miles of siding and storage tracks, distributing leads and switches, so that every pier and warehouse as well as industrial plant is given trackage and distributing facilities not surpassed by any city in the Southwest.

The warehouses, wharfs and terminal facilities entire have given to a Southern port the same scientific methods in transportation and terminals worked out and in operation in the great lake traffic. Economy in time and cost in handling of freight are the main points, but economies also include insurance risks. Every improvement put in meets fire underwriter requirements, with low insurance rates as the result.

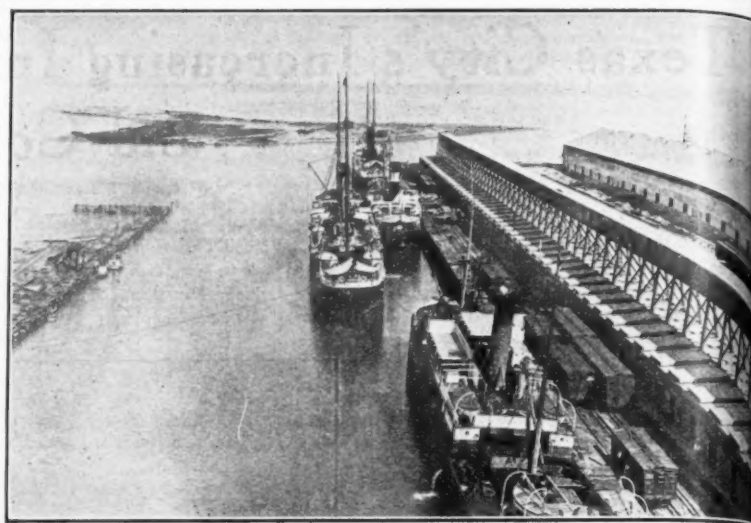
In the development of the Texas City plan there was immense advantage in having the guiding and directing mind of Capt. A. B. Wolvin, who had grown up in the transportation business of the great lakes, and who had been identified with the methods that revolutionized that trade. Although associated with the first purchases of the Texas City properties more than 20 years ago, he accurately foresaw that the proper time for their development would not come for years, and the first crude pier and other earlier developments were made before he took control. It was about eight years ago that Captain Wolvin began to work out his plans for the development of the port. A 16-foot channel was first dredged out by him and his associates, and the commerce of the port showing a total valuation of \$998,428 for 1904, the Government took over the work and the improvement and maintenance of the channel then went permanently into Government hands. Since that time the development of the port has been carried on by the Texas City Transportation Co. and

and E. C and D are of steel and reinforced concrete construction, each 100x175 feet in size, divided by fire walls into bays 100x250 feet each. Spur tracks serve the dock warehouses, cars for which are operated electrically by the third-rail system. The standard equipment of the warehouses includes electric traveling cranes, to which powerful magnets may be attached when required for handling iron and steel. The Hanak electrical conveyor, a great time and labor saver for loading and unloading vessels and transferring cargoes through-out a warehouse, has also been installed.

Warehouse E is of steel frame and corrugated walls and roof, with reinforced concrete foundation. It is 118x522 feet in size. It is situated alongside the bridge crane tracks, which occupy the space between the warehouse and the dock on the south side of the main pier.

In the construction of this warehouse there has been introduced one of the most advanced ideas in the handling of freight. Alternate panels of the roof are so constructed as to be in effect rolling hatches, which can be moved to one side. With the bridge crane loads may be lifted into or out of the warehouse through these roof hatches, and in one operation transferred to or from a ship's hold.

The traveling bridge crane, in duplicate, is in itself one of the most interesting and important of the freight handling devices which have been installed. The cranes travel on three tracks laid with 90-pound rail along the entire south side of the pier, with distance between dock leg and outside leg of 120 feet. Between the leg tracks are four switch tracks for cars to be loaded or unloaded. A truss bridge supports the plate-girder boom, which is 112 feet in length. Separate motors pro-



NORTH SIDE OF MAIN PIER.



ELECTRIC BRIDGE FREIGHT CRANE LIFTING CARGO FROM WAREHOUSE.

pel the cranes along the tracks, operate the boom and handle loads. Equipment comprises swivel hooks for lumber, etc.; clamshell buckets for handling coal, etc., and magnets for iron and steel, with a lifting capacity of 11,000 pounds. The clamshell bucket has a capacity of 2½ tons of coal to a bite, and each crane can handle 200 tons an hour from ship's hold to the storage bins, which are located along the pier just behind the third leg. Large shipments of coal are brought here through arrangements made with the Davis Coal & Coke Co. of Baltimore and West Virginia.

In addition to the dock warehouses, devoted to transit freight principally, there are five land warehouses, used mainly for storage purposes. They are ranged along the tracks in tandem fashion. All are equipped with inside tracks, so that cars may be loaded or unloaded by trucking directly between the car door and the floor. All but the older of these buildings is of fireproof construction. No. 1 is frame, 75x1000 feet, divided by fire-brick walls with automatic firedoors into sections 75x125 feet each. Warehouses 2, 3, 4 and 5 are of steel frame, on reinforced concrete foundation. The walls are of cement plaster, on metal lath, and the roof is of cement tile. Each of these warehouses is 100x250 feet in size.

A reinforced concrete grain elevator, with 500,000 bushels capacity, completely equipped with the most modern electrical machinery, is a conspicuous feature of the recent improvements.

It is significant of the rapidity with which the port is developing that the demand for facilities and capacity is constantly outstripping the provisions made. Work under way will greatly add to the present facilities, which themselves repre-

sent a very considerable recent expansion, but it is manifest that additions and extensions must go on indefinitely to keep pace with constantly-increasing demands.

The new work in hand comprises a pier 900 feet long by 500 feet wide, and two new warehouses, of steel and reinforced concrete construction. Each will be 100x900 feet in size. The one on the south side of the pier, which will be finished first, will be two stories in height. The concrete work in this structure will cost \$210,000. The warehouse on the north side will follow immediately after, the contract calling for completion of the work September 1. The new warehouses will be used for transit freight. The new pier will add five working berths, making provision for loading at one time five of the largest steamships that come to Gulf ports. This will give a 25 per cent. increase to the facilities of the port, which now accommodate about 20 ships at one time.

The transportation company is also building three cotton concentration sheds, with storage facilities, which will add 50 per cent. to the present capacity, enabling the company to handle and store 150,000 bales of cotton at one time. The dock layout is such that the company will be able to handle next season, without congestion, 1,500,000 bales of cotton.

Indicative of the rapidly-growing importance of Texas City as a cotton shipping center, outside interests are building here a high density cotton compress of the largest and most modern type, and in connection with the compress are building a cotton shed to be practically fireproof, 100x2000 feet long, to take care of the commercial business of the port, storing cotton for farmers, etc.

That the development of the Texas City

port is a business estingly port for official foreign Cotton only \$7 other co ber, oils house p cooperat imports wise tra up of sl \$33,151, in the n and Eas are able tion of t the use A sun for 191 statemen City beg the acco

Foreign Foreign Coastw To

1904... 1905... 1906... 1907... 1908... 1909... 1910... 1911...

For order to sort of Texas C of Pacific to the st



FIVE CONCRETE WAREHOUSES VIEWED FROM TOP OF GRAIN ELEVATOR.



WAREHOUSE FILLED WITH COTTON BALES.

the 3500 or 3700 that Texas City contains today.

Now, however, preliminaries having been arranged to the satisfaction of those having matters in charge, and conditions being deemed ripe for the beginning of a steady march to real, substantial greatness, attention will be given to attracting population. The work that has been done consists in the inauguration of a complete low level sewer system; water-works, abundantly supplied by the purest of artesian water; a 24-hour current electric-lighting system throughout the town; 9 or 10 miles of shell-paved streets and concrete sidewalks and curbs; a commission form of municipal government, consisting of mayor and two commissioners, and many of the airs and graces of city life. There is a country club on the outskirts of the city, and good roads connect with the boulevard between Houston and Galveston. The causeway puts Texas City within a few minutes by automobile of the un-

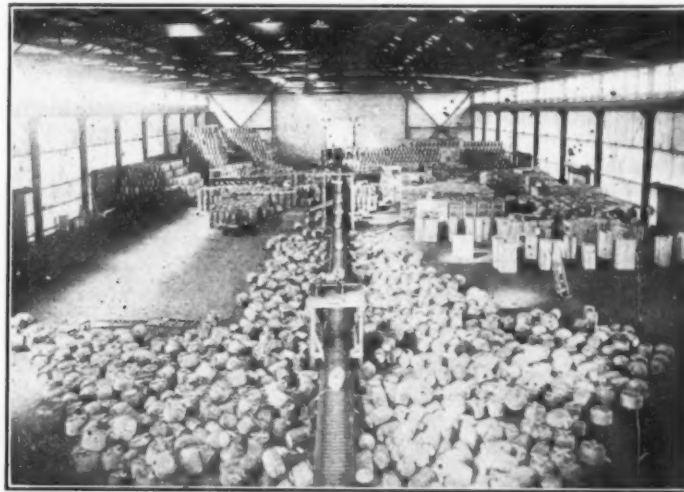
To Develop North Carolina Land.

David Baird of Camden, N. J., has purchased the Norva Land & Lumber Co.'s property near Wallaceeton, N. C., and writes to the MANUFACTURERS RECORD as follows:

"There is about 10,000 to 11,000 acres in this property, of which about 1000 acres is cleared farm land which is of the very best. My intentions are to clear off all the timber, amounting at present to about 30,000,000 feet of poplar, cypress and gum, and then put it up into farms of from 50 to 100 acres and sell them off. I will sell all the timber now standing and reserve the right of the land."

To Manufacture Car Steps.

The Blake Car Step Works, Charlotte, N. C., has been incorporated with \$250,000 capital stock to manufacture folding car steps invented by John S. Blake, one of the incorporators of the company. The



SECTION OF HANAK CONVEYOR IN WAREHOUSE.

port is a many-sided one, statements of the business handled during 1911 most interestingly show. The total commerce of the port for 1911 is given a valuation by the official figures of \$61,524,263.15. Of this, foreign exports comprised \$28,009,723.65. Cotton almost monopolized the exports, only \$759,357 representing the value of other commodities, which embraced lumber, oils, manufactures of iron, packing-house products, grain and grain products, coopeage and miscellaneous. Foreign imports totaled \$362,765, but the coast-wise trade, which was very largely made up of shipments into Texas City, totaled \$33,151,774.50. This commerce consisted in the main of the products of Northern and Eastern manufacturers, who find they are able to get ready and quick distribution of their wares into the Southwest by the use of this port's facilities.

A summary of the business of the port for 1911, together with a comparative statement for all the years since Texas City began business as a port, is given in the accompanying table.

Recapitulation.				
	Vessels.	Reg. tons.	Tons cargo.	Valuation.
Foreign imports (with cargo only)...	20	18,507	1,426	\$362,765 00
Foreign exports.....	66	156,848	144,402	28,009,723 65
Coastwise.....	169	340,609	303,867	33,151,774 50
Totals.....	255	515,964	444,695	\$61,524,263 15

Comparative Statement.				
Year	Vessels	Reg. tons	Tons cargo	Valuation
1904.....	12	15,171	8,712	\$998,428 00
1905.....	87	82,214	76,097	3,774,515 00
1906.....	115	102,489	84,315	5,738,094 00
1907.....	138	102,504	77,459	6,367,773 00
1908.....	199	166,203	159,835	22,875,732 00
1909.....	208	234,708	180,003	34,138,444 00
1910.....	239	441,943	352,472	47,213,753 00
1911.....	255	515,964	444,695	61,524,263 15

For purposes of comparison, and in order to gain a real conception of what sort of a development is in progress at Texas City, a careful study of the figures of Pacific coast ports would be of interest to the student of affairs. And in this con-

nection it must be borne in mind that Texas City began her development eight years ago, has been an incorporated city less than three years, and has a population today of little more than 3500.

The steamship lines now in the service of Texas City include the Texas City Steamship Co., New York; Elder-Dempster line, Bremen; Harrison line, Liverpool; Leyland line, Havre and Liverpool, and the Wolvin line, Mexican ports. Additional service will manifestly be required as the business of the port expands, and lines to other European ports are already under negotiation for inauguration with the beginning of the next cotton season.

As for the town of Texas City itself, there have been none of the landsman's methods adopted to force an artificial activity. In fact, there has been extreme caution and conservatism in methods and means employed and in statements made. Instead of "turning Texas City loose," the plan has been to put on the brakes, so that nothing like a premature boom might occur. The result is that this is the first

rivalled beach and the alluring hotels and gayety of Galveston, and the trip to Houston may be made in little more than an hour by train, interurban or automobile. It is inevitable that in time there will be a street-car system here, for local service and connection with the Houston-Galveston interurban line. There are banks, schools, churches and business blocks, and the beginning of every facility required for an industrial and commercial center and for the comfort of urban life. There is boating, bathing and fishing on the bay to the heart's delights. Texas city is heralded as an attractive town to live in, and those who are coming in with money enough to start on are making good. There are opportunities for oyster farming in the nearby waters, and for trucking on adjacent lands. The county authorities, through bond issues for drainage purposes, are changing the cattle ranges into truck and garden farms and orchards, and this work will continue, it is foretold, till the entire section round about will abound with an intensity of cultivation that will make it look like the vineyard section of France.

The Board of Trade of Texas City is going after industries. In addition to the best trackage and distributing facilities to be found, it is proposed to offer free sites and power at cost. There are already several industries here, one of them, the refinery of the Pierce-Fordyce Association, being of the first importance. The present plant has a capacity of 2000 barrels a day, and turns out various by-products. A million dollars is now being spent in enlarging and increasing the already extensive refinery, more than doubling present capacity, and adding a number of by-product departments.

ALBERT PHENIX.

company writes to the MANUFACTURERS RECORD that organization has not been perfected, but that details are now being considered.

The Arkansas State Bankers' Association at its convention last week adopted resolutions commending the various movements in the State looking to the greater development of its natural resources, the enactment of more liberal legislation toward securing capital in large sums, the building of additional railroads, and the bringing of desirable immigrants to the State.

Mr. John Jermain Porter has resigned his professorship in the University of Cincinnati to devote his time to consulting practice as a metallurgical and chemical engineer, making his headquarters at Staunton, Va., where he will co-operate with Mr. Charles Catlett, geologist and chemist, of that city.

The Lynchburg (Va.) Hosiery Mills has received an order from the War Department to furnish 50,000 pairs of socks. This hosiery is knit, dyed and finished at Lynchburg, and this order is the seventh the company has received from the Government.

The Southern Hardware Jobbers' Association at its meeting last week at Nashville, Tenn., elected Charles H. Ireland of Greensboro, N. C., president; W. A. Parker of Atlanta and W. M. Pitkin of New Orleans, vice-presidents, and John Donnan of Richmond, Va., secretary.

It is estimated that during the fiscal year to end with June the value of automobiles and their parts exported from the United States was \$27,000,000.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Calvert, Tex.—Robertson county voted \$150,000 bond issue for road construction.

Booneville, Miss.—Prentiss county voted \$50,000 bond issue for road construction.

Bonds to Be Voted.

Staunton, Va.—Augusta county will vote July 2 on \$25,000 bond issue to improve 70 miles of road.

Contracts Awarded.

Baltimore, Md.—City awarded contract for paving 34th street; 4800 square yards.

Oxford, Ala.—City awarded contract for 5000 square yards street paving.

Dallas, Tex.—City awarded contract to pave Parry avenue with asphalt macadam and to place curbing on either side of street.

Rocky Mount, Va.—Franklin county awarded contract to grade courthouse lawn and lay concrete walks throughout grounds and along Main and Court streets.

Waynesboro, Ga.—City awarded contract to construct eight miles cement sidewalks in residential section; cost \$30,000.

Richmond, Va.—City awarded contract to pave portion of Broad street with asphalt block; \$50,000 appropriated.

Contracts to Be Awarded.

Birmingham, Ala.—City will pave portion of street with asphalt on five-inch concrete foundation; also pave gutter with vitrified brick on concrete base for width of 24 and 30 inches.

Little Rock, Ark.—Street Improvement District No. 189 receives bids June 10 for grading, curbing and guttering.

Gurdon, Ark.—City will lay one-half mile of concrete walk.

Tallahassee, Fla.—City will construct 22,000 square yards brick paving and 12,000 feet curbing.

Baltimore, Md.—City will construct macadam roadway at Back River disposal plant.

La Crosse, Va.—Mecklenburg county will construct about 30 miles of road.

Roanoke, Ala.—Randolph county will grade, drain and surface with sand-clay or top-soil State-aid road; expenditure \$10,000.

Little Rock, Ark.—Street Improvement District No. 198 will grade, drain, curb and pave with wood blocks, asphalt, bitulithic, concrete, tar-bound macadam or other materials.

Little Rock, Ark.—England Realty Co. will construct roads, sidewalks, sewers, etc., in Young's Park.

Frostburg, Md.—City receives bids June 14 for grading and paving 800 feet.

Poteau, Okla.—City will improve streets; 35,300 square yards water-bound macadam, 6100 square yards asphalt-bound macadam, 9000 cubic yards grading, 22,630 linear feet concrete curbing and 28 concrete cross-drains.

Richmond, Va.—City will construct bituminous macadam driveway in Marshall Square.

Hardin, Ky.—City will construct 500-foot concrete sidewalks.

Brooksville, Fla.—Town will pave streets; cost \$36,000.

The Board of Port Commissioners of New Orleans has published a pamphlet with many illustrations showing the importance of the port in American commerce and telling of its facilities for even larger operations.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

READY FOR CLINCHFIELD.

Charleston & Western Carolina Spending Millions to Modernize Its Line.

Concerning reports from Augusta, Ga., that \$2,000,000 would be spent within the next year or two for general improvements on the Charleston & Western Carolina Railway to handle Clinchfield traffic, President T. M. Emerson of the Atlantic Coast Line, which operates the property, wires that the board has taken no action with reference to any extraordinary expenditure, but that the Charleston & Western Carolina company is currently spending considerably more than the sum named for improving its property and its equipment.

The railroad in question extends from Port Royal, S. C., to Spartanburg, in the same State, nearly 250 miles, with branches of 58 and 36 miles to Anderson and Greenville, respectively. Headquarters are at Augusta, which is nearly midway on the road. Connection is made at Spartanburg with the Carolina, Clinchfield & Ohio Railway, or Clinchfield Route, and there is a traffic arrangement between the roads, which will, it is expected, result in the handling of heavy coal trains from the mines in Virginia over the Clinchfield, the Charleston & Western Carolina and the Atlantic Coast lines into Charleston, the connection between the last two roads being at Yemassee, S. C.

As is stated by President Emerson, much money has been and is being spent upon the Charleston & Western Carolina road for its general upbuilding. The work includes easing of curves and grades, filling in trestles and protecting the line against floods along the Savannah River. Probably before the completion of the Clinchfield's link to Elkhorn City, contract for which has just been awarded, the Charleston & Western Carolina road will be throughout in excellent shape to handle through business in connection with the proposed new through route between the South and the West.

CARS, LIGHTS AND POWER.

J. F. Strickland of Dallas, Tex., Describes Work of Big Electric Company.

Further information concerning the Texas Power & Light Co. from Dallas, Tex., says that J. F. Strickland of that city will be president of the corporation. He is quoted saying:

"The rapid development of interurbans in the black belt and of the communities they serve has prompted the formation of the company. We hope to be able to supply some of these roads with electricity, and have arranged to do so with the Southern Traction Co., which is now building its line from Dallas to Waco and Corsicana. We will construct a transmission line along the Southern Traction Co.'s right of way, and our plant will be large enough to furnish electricity wherever the transmission line runs, with the result that we will be able to provide electricity to towns which are too small to support an individual light plant, and even to individual farmers.

"Generating electricity in one large plant and transmitting it over long distances has been proved to be a complete success in other parts of the country, particularly in California and the Northwest, and in those sections it is unusual to find even a village of 200 or 300 people that

does not have as good electric service as the larger cities, since they are served from the same plants which serve the largest cities. The ranchers have found it more economical to run their feed choppers and similar farm machinery by electricity than by hand. Barns and farmhouses are lighted by electricity, the washing and ironing are done by electricity, water is pumped by electricity, and, in short, the farmer and his wife have most of the conveniences of the city resident."

The charter of the Texas Power & Light Co. authorizes it to operate in 20 counties of Texas, thus: Grayson, Fannin, Lamar, Hunt, Collin, Denton, Cooke, Tarrant, Parker, Dallas, Kaufman, Navarro, Ellis, Johnson, Hill, McLennan, Bell, Falls, Williamson and Brown.

The articles of incorporation were filed by T. B. Williams of Dallas and James E. Ferguson of Temple, Tex. The board of directors will be J. F. Strickland, Osce Goodwin and R. A. Ferris, Dallas; W. J. Neale, Waco; F. G. Sykes, Crawford, N. J.; W. W. Cameron, Waco; A. S. Grenier, New York; J. E. Ferguson, Temple; C. M. Campbell, Jr., Temple; M. H. Arning, Brooklyn, N. Y.; W. R. Brents, Sherman; F. P. West, Cleburne; Niel A. Weathers, New York; N. A. McMillan, St. Louis; S. Z. Mitchell, New York; W. B. Head, Dallas; W. S. Rathell, Waco. The capital stock will be \$9,000,000, which may be increased to \$13,000,000.

The contract with the Southern Traction Co. is for 50 years instead of 5 years, as was erroneously reported last week.

A letter from Dallas says that the power for the interurban lines of the Trinity Valley Traction Co. will be furnished by the Texas Power & Light Co., and that construction on the two railways proposed, namely, from Dallas to Austin and from Dallas to Palestine, Tex., will soon begin. The traction company contemplates the construction of about 270 miles of interurban railways in the central part of the State, besides eight miles of street railway in Palestine.

The full list of officers of the Texas Power & Light Co. is reported elected thus: President, J. F. Strickland, Dallas; vice-presidents, Osce Goodwin, Dallas; F. G. Sykes and A. S. Grenier, New York; George S. Haley, Dallas; treasurer, M. H. Arning, New York, and secretary, Charles H. Hubbell, Dallas.

Headquarters will be in Dallas, with George S. Haley as general manager, and W. B. Head, also of Dallas, general superintendent.

SAN ANTONIO'S NEW LINE.

Artesian Belt Becomes Part of System and Will Be Extended.

[Special Cor. Manufacturers Record.]

San Antonio, Tex., June 3.

Announcement that the European Contract Syndicate, Ltd., has purchased the Artesian Belt Railroad, extending between Macdona, on the Southern Pacific line just west of San Antonio, and Christine, in the southern portion of Atascosa county, 43 miles, has caused a renewal of interest in the construction of the San Antonio, Rockport & Mexican Railway between San Antonio and the Gulf coast, and at the same time an impetus has been given to the projected building by the same company of a direct line of railway between San Antonio and the lower Rio Grande Valley by the enthusiastic reception given San Antonio business men during their recent excursion to the Rio Grande country and the insistent demand on them by the people there for this new railway. When the Artesian Belt Railroad was sold by the receiver in April it was bought by H. E. Hildebrand of San Antonio, but until now he has de-

clined to say for whom he made the purchase.

Representatives of the English syndicate have announced their purpose of extending the line at once from Christine to Crowther, a distance of 14 miles, and express confidence that within a year the construction of the line between Rockport and Crowther will be completed. The entire route of the Artesian Belt Railroad is to be laid with 90-pound steel rails and rock-ballasted, according to the original plans for the building of the S. A., R. & M. Railroad, and from a point between Fruitland and Somerset the syndicate will build a direct line into San Antonio. Later it is proposed to use the road from this connecting point to Macdona as part of a through freight line which will extend past the Medina dam and through the Medina Valley to San Angelo, connecting at some point northwest of San Antonio with the passenger line to be built from this city. This will enable the railroad company to avoid hauling all its freight through San Antonio.

E. Cowper-Thwaite, S. A. Hopkins and R. R. Russell, president and first and second vice-presidents of the San Antonio, Rockport & Mexican Railroad, and H. E. Hildebrand have been added to the directorate of the Artesian Belt Railroad.

FAST PEACH TRAINS.

Complete Arrangements for Transporting Georgia's Early Fruit to Market.

The Southern Railway Co. says that the Georgia peach season for 1912 has opened with the movement of the first car from Atlanta over its lines, and which was delivered at Jersey City on schedule time. Arrangements for handling the bulk of the crop with equal dispatch have been completed via special trains operated on passenger schedules. Peaches from South Georgia points are concentrated in Atlanta, reiced at the Southern's Inman yards and there made into trains for the fast movement to the East.

Anticipating a bumper crop, the Southern Railway, in co-operation with connecting lines and the Fruit Growers' Express, which furnished the special refrigerator cars used in this service, for several weeks has been moving these cars southward, and there is now a larger number of cars in proximity to the orchards than ever before this early in the season. Others are being rapidly moved toward the orchards, and numbers of them are to be seen in practically every freight train between Washington and Atlanta. It is confidently expected that there will be an ample supply of cars.

In preparation for the large crop that is expected, the icing plant at Inman yards has been enlarged and overhauled. Platforms and tracks have been extended, giving a capacity for 24 cars. It will take only 15 minutes to reice this number and place others in their places. Special forces have been organized for this work at Atlanta and also at Charlotte, N. C., and Potomac yards, Virginia, at which points the cars are again iced. To facilitate the prompt movement of the peach specials out of Atlanta, work is being rushed on the double-track construction in progress between Atlanta and Gainesville, and the engineers in charge state that they will have 30 miles ready for use by June 12, when the movement is expected to assume large proportions.

ATLANTA—MACON.

Chicago Firm Arranging Plans to Begin Construction of Interurban.

Application has just been made to the Georgia Railroad Commission by the Atlanta & Macon Railway Co. for authority

to issue \$3,600,000 of bonds and an equal amount of stock, this being preliminary to beginning construction on its projected electric railway from Atlanta to Macon, Ga., 87½ miles. Hearing on the petition is set for July 3. The company proposes to acquire the rights and franchises of the old Atlanta, Griffin & Macon Railway Co., which was organized several years ago for the purpose of building such a road as is now proposed, but which did not succeed in doing so. The application was made by Hollins N. Randolph of Atlanta, counsel for the new company.

Kennett Cowan & Co., Corn Exchange Bank Building, Chicago, who are prominently interested in the enterprise, wire that they are arranging details quickly and expect to start construction of the railway as soon as possible.

The route contemplated for the line is via Forest, Jonesboro, Lovejoy, Hampton, Sunnyside, Griffin and Forsyth, Ga.

A \$2,000,000 TERMINAL.

Texas & Pacific Proposes to Build Stations and Yards at New Orleans.

The Texas & Pacific Railway Co. is contemplating the erection of a passenger and freight terminal, which will cost about \$2,000,000, at New Orleans. Vice-President J. T. Freeman, in charge of the property, is authority for the statement. He says that plans have not yet been prepared, the reason for this, it appears, being that the consent of the City Council is necessary before the company can do anything. The directors of the road have authorized the necessary appropriation. A franchise will first have to be obtained from the Council and privileges must be granted by the Dock Board, so that the road will have wharf space to handle freight by ferry across the Mississippi River.

Mr. Freeman is quoted saying that the perfection of the plans will depend upon obtaining from the public bodies named a final adjustment of all differences existing between them and the Texas & Pacific Railway; also the necessary ordinances.

The location of the terminals has not been revealed, but it is said that options on large blocks of property have been obtained by the company, while other real estate has been purchased. Mr. Freeman said that it is intended to place the terminals as close to the business center as possible, and also that the buildings would be ornaments to the city.

The Texas & Pacific is improving its lines. A report from El Paso, Tex., says that the road from there to Dallas has just been relaid with heavier rails, those of 85 pounds per yard being used on curves and grades, and 75 pounds on tangents. New ties and ballast have also been put in. The rolling stock is likewise being improved and additions are being made thereto.

WACO TO GALVESTON.

St. Louis Southwestern Considering Plans for Extension to the Gulf.

A report from Dallas, Tex., says that the St. Louis Southwestern Railway, or Cotton Belt Route, plans to extend from Waco to Galveston, Tex., about 200 miles, at a cost of \$10,000,000, to prepare for handling business in connection with the Panama Canal.

Officers of the road are quoted saying that the report is only partially true; that the company is contemplating an extension to the Gulf, but no choice of a route has been made, and the matter is still in tentative form.

The only facts known are that the St. Louis Southwestern decided upon an issue

of \$100,000,000 of bonds, part of which are for improvements, and President F. H. Britton is reported as having said recently at Dallas that much of the new money would be spent in Texas.

New Equipment, Rails, Etc.

St. Louis & San Francisco Railroad has ordered from the American Locomotive Co., New York, 40 simple consolidation locomotives, with 63-inch drivers and cylinders 26x30 inches; also, for its Chicago & Eastern Illinois Railroad, 25 simple Mikado locomotives, with 63-inch drivers and cylinders 28x30 inches. All will have Schmidt superheaters.

Texas Midland Railroad has ordered several gasoline electric motor cars from the General Electric Co. for service between Paris and Dallas, Tex., in connection with the Texas & Pacific.

Washington Railway & Electric Co., Washington, D. C., is expected to purchase 60 side entrance cars for city use; also five suburban cars with side entrance.

Macon, Dublin & Savannah Railroad is expected to purchase a locomotive.

Illinois Central Railroad, according to a market report, contemplates purchasing 25,000 tons more of rails.

Jackson (Miss.) Railway & Light Co. has ordered nine semi-convertible car bodies from the American Car Co., St. Louis, five of them including the trucks.

Wheeling (W. Va.) Traction Co., it is reported, will buy 25 double-truck cars.

Baltimore & Ohio Railroad denies a current report that it will purchase several thousand new cars.

Mobile (Ala.) Light & Railroad Co. has ordered 10 pay-as-you-enter cars from the American Car Co.

Atlanta, Birmingham & Atlantic Railroad, it is reported, has ordered five passenger and ten freight locomotives from the Baldwin Works, Philadelphia.

St. Louis & San Francisco Railroad is reported to have ordered 400 50-ton Hart convertible ballast cars from the American Car & Foundry Co., St. Louis, and is getting prices on 1500 box cars in addition to orders recently placed.

A. L. Clark Lumber Co., Glenwood, Ark., is reported to have bought 10 new flat cars.

Seaboard Air Line is reported to have ordered 6000 tons of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham.

Baltimore & Ohio has placed 10 new all-steel postal cars on its through express trains. They were built by the Pullman Company, Chicago.

Dothan to Marianna.

The Dothan, Marianna & Gulf Railroad Co. is reported to have filed incorporation papers for the construction of a line from Dothan, Ala., to Marianna, Fla., about 35 miles. Route will be via Cottonwood, Ala., and Malone and Greenwood, Fla. Survey will be made and construction started immediately. Capital is \$100,000. Officers are: E. L. Marbury of Malone, president; J. D. Smith of Marianna, first vice-president; D. C. Carmichael of Dothan, second vice-president; John Sanders, general manager; D. W. Baker, assistant general manager, both of Dothan. Among others interested are G. H. Malone, J. R. Faircloth, J. R. Young and Joseph Baker, all of Dothan; M. L. Dekle of Marianna, Doc Willis of Greenwood and J. W. Malone of Malone, Fla.

It is also reported that the owners of the Jarrett lumber railroad, running north eight miles out of Marianna, and the Williams Lumber Co. of Eleanor, Fla., have made a deal to connect their two lines. It is further said that the Louisville & Nashville Railroad will build an

extension from Graceville to Marianna, Fla.

New Station Opened at Norfolk.

The new union station built at Norfolk, Va., by the Norfolk & Western, the Virginian and the Norfolk Southern railroads was opened for business June 1. The main structure or head house is nine stories high, and fronts 200 feet on Main street, at the eastern end of which it is situated, with a depth of more than 100 feet to the train sheds, at the beginning of which is a concourse 180 feet long. The general waiting-room is 140x40 feet, with ceiling 28 feet high. The exterior is of red tapestry brick, and the interior is finished in marble and bronze. The cost of the improvement was about \$1,000,000.

Work at Aransas Pass.

Burton & Danforth, San Antonio, Tex., advise that construction is proceeding on the docks of the Aransas Pass Channel & Dock Co. and the Aransas Harbor & Terminal Railroad has been completed from Aransas Pass to the harbor front, six miles. Definite arrangements have been made for steamship service to both New York and Europe. No construction whatever has been done out of Rockport to the harbor.

Money for "Orient" Extension.

The Kansas City, Mexico & Orient Railway has sold \$1,000,000 of 5 per cent. two-year receiver's certificates to R. L. Day & Co. of Boston, at 98.52, and it is proposed to immediately complete the extension from Granada to Fort Stockton, Tex., 32 miles. When that is done the line will be further extended to Alpine, Tex., 63 miles, connecting there with the Southern Pacific Railway. Work is to start at once.

Pittsburgh to Cumberland.

An official train has made a through run from Pittsburgh, Pa., to Cumberland, Md., over the Pittsburgh & Lake Erie Railway and the Connellsville extension of the Western Maryland Railroad, this being for inspection purposes. Officers of the New York Central lines and also of the Western Maryland were on board. The line will not be opened for regular traffic until some time in July.

Products Wanted for France.

Societe Generale D'Explosifs & De Fournitures De Mines, 57 Rue de Chateaudun, Paris, France, writes to the MANUFACTURERS RECORD:

"In regard to importation of American products into France, we should be glad to take sole agencies for American factories making salable goods of any kind, which they can deliver at the right price, all costs and charges, including duties paid at some French port, and enable us to compete with similar goods already on sale in our markets. You have doubtless often had inquiries regarding the establishment and locating of agencies in France for American products. Should anything in that line be brought to your attention, please advise us, and we shall take the matter up most carefully. We are led to believe that the 'Overland' automobiles are in search of a suitable agency in France to represent them, and we also learn that the machine factory known as 'Imperial,' makers of tools, motors of various kinds, pumps, lifts, supplies for mines, are looking around with a view to increasing the business in France. We would be delighted to look after the interests of such people. We are well located, have ample capital and backing, and also have tried and trustworthy agents in our employ, who operate over the whole French country."

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Southern Building in May.

As indicated by reports from representative Southern and Southwestern cities, building operations in these sections were active during May. In Richmond the value of buildings for which permits were issued during the month amounted to \$507,030, including \$409,813 for new buildings and \$37,217 for alterations and repairs. As compared with May, 1911, the increase was \$36,995. Work authorized since the first of the present year represents a value of \$2,105,441. Building operations in Winston-Salem during the month are valued at \$67,475, representing 34 permits. Since the first of the year a total of 178 permits has been issued, representing a cost of construction of \$461,000. In Greenville, S. C., permits were issued to the value of \$73,750, representing 58 permits. The value of operations in Atlanta during the month amounted to nearly \$800,000, an increase of about \$400,000 as compared with May, 1911. For the first five months of this year there was an increase of about \$200,000, as compared with the corresponding period last year. A total of 149 permits was issued in Augusta during the month, representing a cost of construction of \$91,300. Of this total, 45 permits were for new structures to cost \$85,985, the remainder being for alterations and repairs. Figures from Jacksonville during the month indicate a decrease in building operations as compared with the previous month. A total of 58 permits was issued for frame buildings to cost \$113,250, and 13 permits for brick structures to cost \$77,402, making the total cost of construction \$190,652. As compared with April, these figures show a decrease of approximately \$94,000. Nashville's operations for May were valued at \$156,444.50, an increase of \$14,373.25 over those of April. With the exception of less than half a dozen apartment-houses and an equal number of store-houses, the bulk of the building was for homes, ranging in price from \$10,000 down. In Memphis building operations during the month were more active than in April. The cost of construction for the month was estimated at \$545,334.25, as compared with \$277,454 for April. A total of 274 permits was issued in Louisville during May, representing a cost of construction of \$531,862. As compared with May, 1911, these figures show an increase of approximately \$212,000. For the first nine months of the present fiscal year permits have been issued for buildings estimated to cost \$4,191,582. In Dallas permits were issued for eight brick buildings to cost \$64,500, 139 frame buildings to cost \$195,200, and alterations and repairs to cost \$47,473. The cost of construction for which permits have been issued since the first of the year is estimated at \$2,239,956. During the month permits were issued in Baltimore for new improvements to cost \$591,290, additions to cost \$100,000 and alterations to cost about \$70,000, making a total of \$770,899.

Union Cypress Co.

The Union Cypress Co., Melbourne, Fla., writes to the MANUFACTURERS RECORD as follows:

"This company has about 250,000,000 feet of cypress timber and about an equal amount of pine timber west of this point. We will build about 18 miles of railroad to reach this timber and a sawmill at this point. The railroad will be about completed by July 1, as we now have over 12

miles laid, and are working on the trestle bridge across the St. John's River, part of which is now built. We will use steam skidders and all modern equipment in the logging of this timber, and will have two locomotives and about 30 cars of 60,000 capacity for the hauling of the logs. The sawmill will be a strictly modern double-band mill of 100,000 feet capacity, steel and concrete frame, and will cut cypress lumber, lath and shingles. The work is progressing rapidly, and mill will probably be in operation by August 1. The lumber yard will have ample capacity, and will be equipped with elevated tank, tower of steel and full equipment of mains and hydrants for fire protection. We have now erected our office, commissary and a large number of tenant-houses, and are working on the balance, which will be completed as rapidly as possible. Contracts for all material have been let. This will be a strictly modern plant in every way; the sawmill will be fireproof; skidders and logging equipment will be heaviest and second to none in this State or anywhere else, and our electric-light plant and fire equipment will be strictly first-class in every respect."

St. Clair Company Plans.

Referring to its plans, the St. Clair Land & Lumber Co. writes to the MANUFACTURERS RECORD as follows:

"In regard to our purchase of timber land at Stewart, Ala., we have closed a trade on 1200 acres of very fine short-leaf timber, and expect to put in a mill within the next 60 days. We will put in a mill of about 25,000 feet daily capacity, and will operate drykilns and planers. The main office of this company is Birmingham, and it is possible we will install a railroad about six miles in length. In case we do, the entire investment will represent about \$20,000. We are not in position at this time to give definite information in regard to the buildings, machinery etc."

To Develop Tennessee Properties.

The Tennessee Timber, Coal & Iron Co., 22 William street, New York, has established general offices at Harriman, Tenn., with S. W. Miller as general superintendent, and is preparing to develop its 25,000 acres of mineral and timber land on a branch of the Queen & Crescent Railway, surrounding Nemo, Tenn. The first development will be to cut the timber, and a mill with a daily capacity of 50,000 feet of lumber will be erected. A railway into the timber is now being constructed. This company's incorporation was announced some time ago.

Contract for Big Mill.

The Bowman-Hicks Lumber Co., Kansas City, has awarded contract to Thralls & Shea of Lake Charles, La., to erect the buildings for its Oakdale (La.) mill, which will be equipped for a daily capacity of 150,000 feet of lumber. The equipment of machinery will be removed by the company from its Loring (La.) plant to Oakdale, except that a circular saw will be installed instead of the present saw.

Daily Output 1000 Tons.

The Big Brushy Coal Co., Petros, Tenn., will develop coal land and has plans for a daily output of 1000 tons of coal. This corporation was chartered last week with \$100,000 capital stock, and has organized with the following officers: President, treasurer and manager, George P. Howard; vice-president, Joseph P. Gault; secretary, L. M. G. Baker.

In May 8,034,050 stogies were manufactured in the Wheeling (W. Va.) district.

TEXTILES

The Thread Mills Company.

The Thread Mills Co., Spray, N. C., which recently purchased several textile enterprises at Spray, writes to the MANUFACTURERS RECORD as follows:

"We do not anticipate any additions to these plants at present, but improvements in machinery and methods are being installed in all. The equipment is as follows:

	Rhode Island.	Spray Woolen Mill.
Spindles.....	10,000	2500 mule.
Looms.....	140	60
Pounds per day.....	7,000	2000
Pairs per day.....	1,650	480
Operatives.....	250	120

"The American Warehouse is a finishing plant, equipped with 36 nappers and the requisite machinery for the finishing of 4000 blankets per day and 1700 pieces of piece goods, with 200 operatives."

Postex Cotton Mills.

The Postex Cotton Mills, Post, Tex., will manufacture bleached and finished bed sheets, the daily output to be 3000. The buildings will be 50x100, 100x240 and 130x520 feet, of reinforced concrete throughout, costing \$100,000, and the Unit Construction Co. of St. Louis has the contract. The machinery (which has also been contracted for) will include 10,000 spindles and 180 broad looms. This Post company (erroneously mentioned last week as the Post Cotton Mills) has organized with officers as follows: President, C. W. Post of Battle Creek, Mich.; vice-president and manager, H. W. Fairbanks of Post; secretary, J. F. Hartford of Post; treasurer, A. B. Williams of Battle Creek. Its capital stock is \$550,000.

For a Mercerizing Plant.

The stockholders of the Coosa Manufacturing Co., Piedmont, Ala., have appointed A. G. Thacher, president; W. L. Verlender and Eldridge McFarland, directors, of their company, a committee to plan the organization of a company capitalized at about \$75,000 to build a mercerizing plant at Ridgedale, near Chattanooga, Tenn. It is proposed to have a weekly capacity of from 20,000 to 25,000 pounds of yarn, this product to be obtained from the Coosa company's mill. Mr. Thacher and associates were mentioned last week as planning an enterprise of this character.

Enlarging Prattville Mill.

The Prattville (Ala.) Cotton Mills Co. will build a 48x58-foot addition, of brick construction, with concrete floors, for clothroom and office. It has awarded the contract to Algernon Blair of Montgomery. It has also awarded a contract to Mr. Blair for a 50x100-foot standard cotton warehouse of three compartments, with concrete floors. This Prattville company was recently reported as to add new machinery costing \$50,000.

Calico Print Works Addition.

J. L. Stifel & Sons, Wheeling, have awarded contract to Charles D. Keyser, Bellaire, O., to erect their calico print works addition announced last week. This new building will be of reinforced concrete construction, 100x125 feet, and three stories high. C. W. Bates of Wheeling is the architect.

Proposed \$500,000 Mill.

B. B. Comer, Birmingham, and associates have not arranged for location or perfected plans for \$500,000 cotton mill lately noted. The Avondale Mills, of which Mr. Comer is president, now operating the Avondale Mills at Birmingham and the

Central Mills at Sylacauga, Ala., will operate the new plant.

To Double Ella Mill.

The Ella Manufacturing Co., Shelby, N. C., will soon award contract for erecting its additional building announced last week, J. E. Serrine of Greenville, S. C., being the architect-engineer in charge. This company has ordered 5184 ring spindles, 126 looms from the Draper Company of Hopedale, Mass., etc., for doubling its capacity.

High Point Branch Addition.

The Durham (N. C.) Hosiery Mills has awarded contract to T. C. Thompson & Bros., Charlotte, N. C., to build that company's addition to its branch mill at High Point, N. C. This new building will be three stories high, 90x100 feet, of slow-burning mill construction, costing \$15,000. J. E. Serrine, Greenville, S. C., is the architect-engineer in charge.

To Add 16,000 Spindles, Etc.

The Exposition Cotton Mills, Atlanta, will add 16,000 spindles, intermediates, slubbers, speeders, etc., and has awarded the contracts for this new machinery. The company is now making general improvements to and overhauling its plant.

Textile Notes.

The Newnan (Ga.) Cotton Mills will add 13,312 spindles, and has awarded the contract for this new machinery.

R. J. Stough, Cornelius, N. C., is planning the erection of a cotton mill, as lately reported. He proposes the organization of a company.

The Brandon Mills, Greenville, S. C., is considering the addition of 10,000 spindles and 200 looms. The plant now has 80,000 spindles and 200 looms.

The Union Cotton Mills, Lafayette, Ga., will, it is reported, install 242 automatic looms to replace old types. This company has 18,000 spindles and 500 looms.

The Ware Shoals (S. C.) Manufacturing Co.'s additional building, reported last week, is for operatives' welfare and amusement, and not for manufacturing purposes.

The Thistle Mills, Ilchester, Md., will install additional looms and has awarded contract for this machinery. It is preparing to install the electrical drive. This company operates 7500 spindles and 72 looms by steam and water power.

MINING

MISSOURI'S COAL OUTPUT.

Conditions of Production During the Past Year.

The final figures for the coal production of Missouri in 1911, according to Edward W. Parker, just made public by the United States Geological Survey, show an output of 3,760,607 short tons, valued at \$6,431,066. This is a notable gain over the production of 1910, and if the banner year, 1907, is excluded, it exceeds the output of the State in any other year since the beginning of coal mining.

In 1910 coal-mining operations in Missouri, as in the other States of the Mississippi Valley region, were suspended for a good part of the year on account of labor troubles, resulting in a decrease in output for Missouri from 3,756,530 short tons in 1909 to 2,982,433 tons in 1910. In 1911 the industry was practically free from labor disturbances, and the output showed an increase of 778,174 tons, or 26.1 per cent. The value increased \$1,102,781, or 20.7 per cent. The average price in 1911

was \$1.71 a short ton, compared with \$1.79 in 1910.

The production of coal in Missouri during 1911 was normal, and no marked increase in the future above that due to increased population in the rural districts may be looked for. Missouri is surrounded by other important coal-producing States, where mining conditions are better than in most of the Missouri districts, and the larger cities of the State, St. Louis and Kansas City, draw their fuel supplies in great part from the bordering States. The markets for Missouri coals are restricted to comparatively local territory, largely rural, and the railroads. Illinois coals are the principal competitors in the East. The coal industry in Missouri suffers also, however, from competition with oil and natural gas.

LITTLE SEQUATCHIE SYNDICATE.

To Develop 22,000 Acres of Coal and Iron Land in Tennessee.

[Special Cor. Manufacturers Record.]

New York, N. Y., June 5.

Charles B. Eddy and his associates have formed the Little Sequatchie Syndicate, and in its name as a holding company they have purchased and taken title to 22,000 acres of coal and timber lands in Sequatchie Valley. It is stated that this property has been thoroughly proven out by exhaustive core drillings, and from these, together with reports of several well-known engineers who have examined the property, they claim a conservative estimate of over 100,000,000 tons of the finest and richest grade of coal deposits. It is stated that this lies practically all in one vein and is superior in quality to any coals so far developed in the Virginias or Tennessee and Alabama. They expect to develop this property, but will not be able to announce any detailed plans for 30 or 60 days. These plans will involve the opening up of mines and building of by-product coke ovens and the probable building of a railroad into the property. The amount to be expended for this development, if carried through, has not yet been determined, and none of the details have as yet been worked out.

(This property is in the district around Moccasin Bend, Tenn., and recent reports stated the Durham Coal & Iron Co. of Chattanooga and New York was negotiating for it. Mr. Eddy is president of that company, with offices at 55 Liberty street, New York.)

To Quarry White Marble.

The Eureka White Marble Quarries of Talladega Springs, Ala., recently incorporated with \$100,000 capital stock, will develop 80 acres of marble property and will want equipment to include channel machines, boilers, hoisting engines, etc. This company has organized with officers as follows: President, George W. Grayson; vice-president, J. B. Chinn; treasurer, W. T. Bolton; secretary, Roy Chinn; manager, John A. Bishop; all of Biloxi, Miss. Address machinery proposals to the president at Biloxi.

Purchased Kentucky Coal Land.

Joseph D. Oliver of South Bend, Ind., has purchased several thousand acres of coal land near Benham, Ky., from the Wisconsin Steel Co. of Chicago, this purchase being a portion of the extensive acreage which the steel company is now developing and upon which it is operating a big coke plant.

To Mine Arkansas Bauxite.

The Ozark Bauxite Co., to mine bauxite in Arkansas, has been incorporated with \$25,000 capital stock by W. B. Becker, S. B. Kelly, W. H. Young, J. M. Holliday and G. J. Wolf, all of Pittsburgh, Pa.

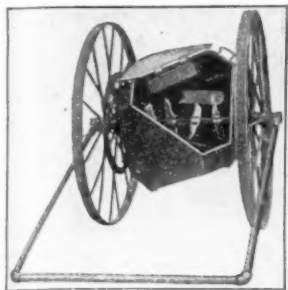
MECHANICAL

The Arnold Hand Traction Concrete Mixer.

A concrete mixer designed to take the place of hand mixing and to be used in connection with power mixers where the latter cannot be employed alone to advantage, is found in the Arnold concrete mixer, which is a hand traction mixer that may be completely operated by two men.

The accompanying illustration shows that this machine is light and simply designed, but at the same time is built to withstand the rough usage that this class of machinery is subjected to in actual practice.

All the materials are placed in the mixer at the same time, and while it is being



wheeled from the material piles to the forms the concrete is mixed, ready to be deposited; the machine can be taken up over the forms and the concrete dumped directly into them, so that there is only one handling of the material, at a great saving of time and labor.

The drum is of such shape as to hurl the materials from one side diagonally across the axle to the opposite side six times in each revolution, in addition to turning them over twice in the line of motion. The plates attached to the sides of the drum carry the materials up so that they are certain to be thrown across the paddles toward the axle. This action alternately breaks up and kneads the mass, so that an excellent cement is said to be obtained by running the machine only 50 feet, and a good mortar mixed in 100 feet.

One side of the drum is hinged as a lid and folds back, so that the loading can be done from both sides, the ratchet holding the drum in place.

In operating these mixers the only weight borne by the men is that of the handle bar, so that all their weight and strength are utilized in propelling the machine, and the large size wheels and their relation to the ratchet, which is attached to the outer portion of the drum, secures to them the full benefit of the power applied.

The capacity of each machine is given at 15 cubic yards per eight-hour day. With one machine two or three men can be sent out to carry on small pieces of concrete work and take the whole equipment with them, and move it from place to place without waiting for teams to come and haul the mixing beds, mortar box, etc. In case of larger work, the number of machines can be increased as the needs of the case require. If the contractor has no power mixer, a group of these machines will give him excellent service, and if he has a power service, one or more of these will supplement his equipment, so that he will have a mixer on all small jobs and scattered work where it would not be economical for him to set up his power equipment. It is stated that these mixers have been used with good success in connection with power mixers, the power mixers being used for the base and these machines for the top coat and finish work. This

mixer is designed and manufactured by F. T. Arnold, New London, Conn., and C. F. Blount, Atlanta, Ga., is the Southern sales agent. A folder describing the mixer and its advantages in operation may be obtained by writing to either of these addresses.

Machinery in a Modern Wholesale House.

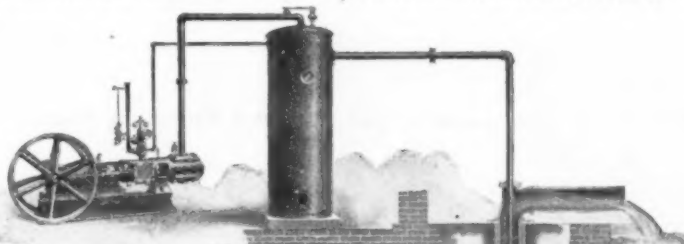
The amount and variety of machinery required in the operation of modern wholesale, department and other stores is well exemplified by the installations in the new addition to the well-known Baltimore Bargain House of Baltimore, Md. Particular attention was given to securing equipment which would prove of economical use and produce efficient working of the force of employees required. The smooth and co-ordinate working of all the departments results from this efficient arrangement, which prevents congestion at any point which would prove detrimental to the service as a whole. The company produces its own electric power, having for this purpose an installation of one 450-horse-power Rice & Sargeant engine (Providence, R. I.), one Allis-Chalmers (Milwaukee) 150-horse-power engine and one Ames 75-horse-power engine, manufactured by the Ames Iron Works, Camden, N. J. These engines are supplied with steam by two 300-horse-power boilers manufactured by the Edge Moor Iron Co., Edge Moor, Del., equipped with Murphy automatic stokers made by the Murphy Iron Works, Detroit. The electric generating plant consists of one 150-kilowatt Allis-Chalmers direct-connected generator, one 350-kilowatt Crocker-Wheeler (Ampere, N. J.) and one 75-kilowatt Westinghouse (East Pittsburgh, Pa.) direct-connected direct-current generator. The current is supplied at 110 volts for lighting and 220 volts for power purposes.

There are eight Otis electric elevators and 10 hydraulic elevators. The hydraulic equipment, including two large elevator tanks, was installed by the Bartlett-Hayward Company, Baltimore. The various equipment is run by Westinghouse and General Electric motors, using Thompson recording watt meters made by the General Electric Co., Schenectady, N. Y., and ammeters made by the Weston Electrical Instrument Co. of Newark, N. J. These instruments are mounted on switchboard made by the Walker Electrical Co. of Philadelphia. The Baltimore Bargain House has a number of electric trucks made by the General Vehicle Co., Long Island City, N. Y. The charging of the storage batteries is done from its power plant. General Electric rheostats are used in charging the storage batteries made by the Electric Storage Battery Co., Philadelphia. Cutler-Hammer starting boxes, manufactured by the Cutler-Hammer Manufacturing Co. of Milwaukee, are used for all the motors.

The pump installation for the hydraulic elevators consists of a Deane steam pump, manufactured by the Deane Steam Pump Co. of Holyoke, Mass., and 115 Broadway, New York. This pump has been in use for several years in the old building of the Baltimore Bargain House, but it was found to be in fine condition for continued use when new machinery was being considered. A Worthington pump for circulating drinking water throughout the cooled-water system of the building is used. The boiler-feed pumps are also of the Worthington type, manufactured by Henry R. Worthington, Harrison, N. J., and 115 Broadway, New York. All the water in the building is filtered after being received from the city mains by Loomis-Manning Filter Distributing Co.'s filters. This company's plant is located

in Philadelphia, and it has an office in the Calvert Building, Baltimore. The drinking water throughout the building is cooled by the United Line refrigerating system, and sanitary drinking fountains are distributed throughout the building. The refrigerating apparatus made under this system is described in catalogue "C" issued by the United Refrigerating & Ice Machine Co., Kenosha, Wis. Ottenheimer Bros., 221 S. Eastw street, are the Baltimore agents. The cooling of drinking water with this refrigerating plant installed in connection with the usual water system gives a plentiful supply of cold water under sufficient pressure to insure each faucet in the building receiving a supply. A large glass-lined tank is located in the basement of the Baltimore Bargain House, in which the cooling coils are wound, the filtered water forced through the water pipes and the water cooled to any temperature desired, passing on to the cold-water system of the building.

Among the interesting time and labor-saving devices used is the Lamson pneumatic tube system of delivery of orders and business communications throughout the store. By means of these tubes papers may be transmitted from any part of the building to any other desired part in a few seconds. They are installed by the Lamson Consolidated Store Service Co. of Boston and Chicago. Another Lamson installation is that of the automatic conveyor, which consists of a wide belt which is so arranged that it connects with the Otis gravity package conveyor, which passes from the top floor to the basement. The belt conveyor carries packages from



GARDNER COMPRESSOR AIR LIFT.

the foot of this gravity system to the packing-room in the basement.

One of the striking illustrations of economical and efficient office equipment is shown in the Lamson pick-up and delivery carrier, by means of which papers prepared at any desk in the clerical room may be transferred to other desks as desired. This carrier is in constant operation during office hours, and its action is apparently so intelligent as to be almost human. A description of the system, with numerous illustrations, is given in the pamphlet issued by the Lamson Consolidated Store Service Co., 161 Devonshire street, Boston. The Baltimore agency is located in the Union Trust Building.

The Otis Spiral Gravity package conveyor installed in the new addition carries packages of all sizes from all floors to the basement by gravity, and has proven a decided improvement over other means of handling outgoing packages. A horizontal package and box conveyor is installed in the basement for transporting heavy packages to and from the receiving and shipping passageways. This is made with equipment of the Jeffrey Manufacturing Co., Columbus, O., through the Carey Machinery & Supply Co. of Baltimore. The mechanical installations were made under the direction of Henry Adams, consulting engineer, Calvert Building, Baltimore, and of Chief Engineer Dawes of the Bargain House.

During the recent celebration by the Baltimore Bargain House of the opening of its new addition, a large number of vis-

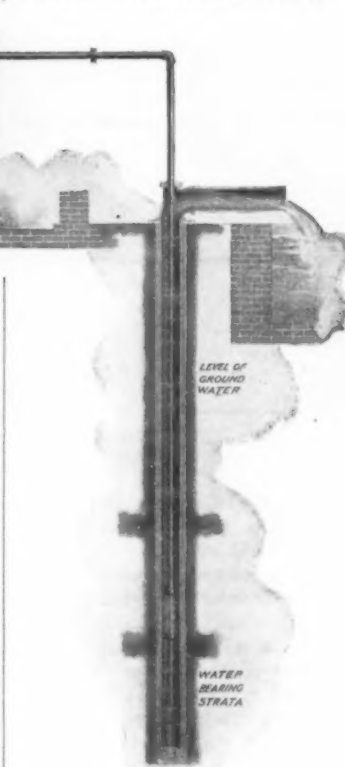
itors were entertained by being shown through the various departments, and particular attention was attracted to the many mechanical features that have been installed.

Pumping Water by Compressed Air.

The system of raising water by compressed air is known as the Pohle Air Lift System on account of two patents issued to Dr. J. G. Pohle many years ago, and is shown in the accompanying illustration. It is conceded to be a very economical manner of pumping water, and many industrial plants are using this system of elevating water from their wells very successfully.

This air lift system of raising water from deep wells consists in the injection of compressed air through an air pipe placed within the water pipe at a sufficient distance below the working water level; the water rising from the bottom after passing through the nozzle or head piece, carries the water up with it to the surface or to the tank. The accompanying cut gives a clear idea of an installation of an air lift outfit, showing a steam-actuated air compressor.

This method of pumping has many advantages, as there is nothing in the well to get out of order, thus annoying and expensive delays caused by improper working of the parts in the well are avoided, as the air compressor and receiver, the only parts of the system that require attention, are on the surface and are readily accessible. Again, one compressor may be used to supply air for a number of wells located at various distances from it. The



power plant being centralized, requires less attention than where numerous other pumps are employed, each located at the well pumped. The flow is regulated entirely by the pressure and volume of air, so that the wells require little attention.

A peculiar and very important feature of the air lift system is that it increases the yield of the well sometimes as high as 200 or 300 per cent. At a test by the city of Bethlehem, Pa., the yield of a well which was normally at the rate of 200 gallons per minute was increased to 627 gallons per minute, or just three times, which is remarkable.

The crank and flywheel type of compressor is also economical in fuel consump-

tion. High duty can be obtained by its use, and it is inexpensive to maintain.

The water is aerated and cooled by the expanding action of the air when coming in contact with it in the well. Experiments have shown that water pumped from a well by the air lift is from three to five degrees colder than the water within the well. This is a decided advantage in ice factories or other plants where a pure and cold supply is wanted for ice purposes or for condensing.

The compressor shown in the illustration is manufactured by the Gardner Governor Co., Station L. Quincy, Ill., which company will furnish catalogue to interested persons on request.

Synchronous Booster Rotary Converter.

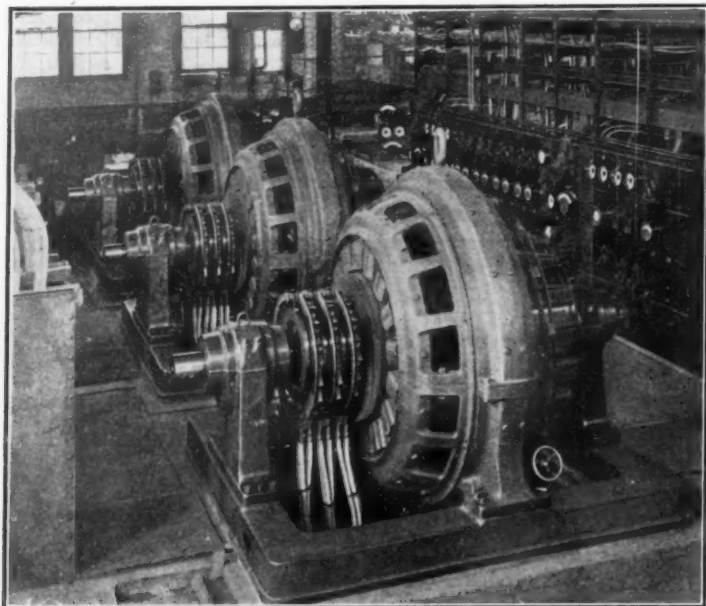
The use of the Synchronous Booster for obtaining a variable direct-current voltage of rotary converters is now advocated by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, for certain applications, and is being used so extensively that an explanation of the principles and of the construction of the Synchronous Booster Rotary Converter is of timely interest. Although this converter has been on the market for a relatively short time,

Smelting & Rolling Co., Baltimore, Md.

Standard Westinghouse rotary converters can be used as part of the combined booster converter unit. A synchronous booster rotary can therefore be provided of any standard capacity, phase, voltage or frequency. They are usually furnished for 250-volt six-phase circuits. The usual voltage variation is within a total range of 30 per cent.; that is, 15 per cent. below and 15 per cent. above the average voltage for which the rotary converter is designed.

These converters are well adapted for any application for which a relatively wide variation in direct-current voltage is required. They are particularly desirable for serving incandescent lighting systems where considerable voltage variation is necessary, for capacity of drop in long feeders, for operation in parallel in storage batteries, and for electrolytic work where extreme variations in voltage are imperative because of change in the resistance of the electrolytic cells; for three-wire service synchronous booster converters can be used in the same way as standard converters.

The installation in the Baltimore Copper Smelting & Rolling Co.'s plant at Baltimore is a typical industrial application of this converter. The three convert-



1215-KILOWATT WESTINGHOUSE SYNCHRONOUS BOOSTER ROTARY CONVERTERS IN BALTIMORE COPPER SMELTING & ROLLING CO.'S PLANT.

there are already in operation 55 Westinghouse machines, aggregating in capacity 70,000 kilowatts.

A synchronous booster converter consists of a rotary converter having on each shaft the armature of an alternating-current generator which has the same number of field poles as the converter. The generator armature windings are connected in sections with the taps between the collector rings and the converter armature winding. By varying the field excitation of this alternating-current generator the alternating-current voltage impressed on the rotary converter proper can be increased or decreased as desired. The direct-current voltage delivered by the converter is thereby varied accordingly. The machine is simply a combination of two standard and thoroughly tried-out pieces of electrical apparatus. The converter field current must be varied, as the alternating-current voltage varies, in order to maintain a 100 per cent. power factor input.

The accompanying illustration shows an installation of three 1215-kilowatt 250-volt synchronous booster rotary converters, with booster frame supported from converter frame. This installation is located in the plant of the Baltimore Copper

Smelting & Rolling Co. The machines have been in operation for over two years, and have proven so satisfactory that when additional capacity was required a fourth unit was installed. Energy for the converters is furnished by the Consolidated Gas Electric Light & Power Co. of Baltimore.

The installation of the New York Edison Company in Gimbel Bros.' store, Herald Square, New York city, illustrates a typical application of these converters for lighting service. They use a three-wire system, and the required voltages are obtained through the use of a motor generator balancer across the two outside wires of the three-wire system.

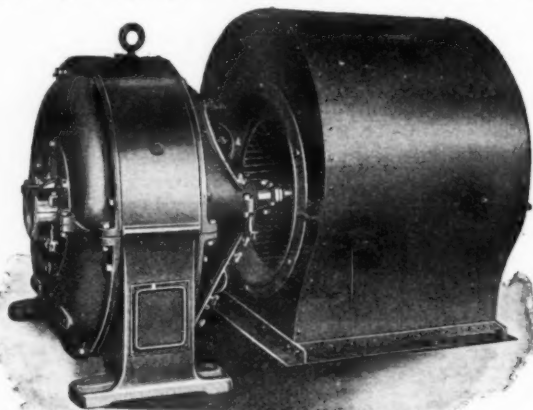
The Westinghouse company during the last 4½ months has completed, or has under construction, rotary converters to a total capacity of 88,000 kilowatts, and for the past 12 months it is in excess of 200,000 kilowatts. These figures bring the grand total capacity of Westinghouse rotary converters up to 1,500,000 kilowatts, equal to 2,000,000 horse-power.

Some of the features which the company claims are augmenting the demand for Westinghouse rotaries are the synchronous booster; the commutating pole; the high heavy load capacity of the commutating

pole railroad type rotary; the simple brush-lifting device for lifting direct-current brushes while starting the commutating pole machines from the alternating-current side; the use of "Broncol" brushes on the alternating current collector rings; the mechanical oscillation, and the protection of all Westinghouse rotaries with speed limit devices.

"Sirocco" Blower Fans Afloat and Ashore.

The variety of uses of "Sirocco" fans manufactured by the American Blower Co., Detroit, Mich., is illustrated in the



"SIROCCO" BLOWERS FOR BATTLESHIPS.

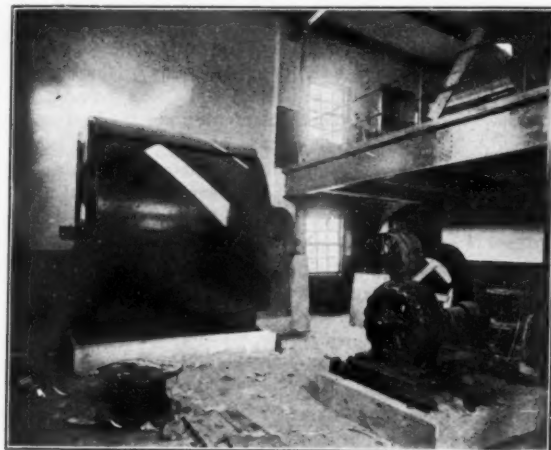
recent installations of these fans aboard the United States battleships Utah and Florida, and the large ventilating system of the Pennsylvania tunnels in New York city.

The Utah and Florida were designed for 20.75 knots. During their four-hour trials the Florida made 22.07 knots average speed and the Utah 21.04, which, considering the increased power required to add a fraction of a knot to these high speeds, shows the importance of the adequate forced-draft system employed to produce the required steam. The illustration shows the "Sirocco" blowers, of which 12 were installed on each vessel. The wheel

plied to the occupants of the cars, it was decided to deliver to the tunnels 50 cubic feet of air per minute per person, or two-thirds more than was actually required to maintain a sufficiently pure atmosphere. After due consideration the system found to be best adapted to the conditions was a forced-draft system of the same kind as used for ventilating a number of railroad tunnels going through the mountains. In this system the air is introduced in a stream of constant flow through a divided nozzle, which delivers it on each side of the tunnel through expanding outlets placed in the bench walls. These outlets

direct the flow of the air stream in the direction of traffic in the various tunnels. After the installation it was found by test that decided injector effect was obtained by the use of these special outlets. This effect was so pronounced that a strong current of air was induced, which flowed from the entrance of the tunnel toward the fan, which is placed about 750 feet from this entrance, and this current blows toward the other end of the tunnel.

The blowers used are "Sirocco" fan blowers, which are particularly adapted to this work, due to the relatively small space as occupied by the fan for a given volume, and also due to their high effi-



"SIROCCO" BLOWER IN PENNSYLVANIA RAILROAD TUNNEL.

of each blower is only 33 inches in diameter, but owing to its great efficiency it is capable of delivering 28,500 cubic feet of air per minute. With all the blowers in operation at once, the amount of air delivered to the boiler fires is 342,000 cubic feet per minute, or 768 tons of air per hour. The importance of this large capacity is appreciated when it is considered that in a ship's equipment every square foot of space is valuable.

At the time of the building of the great Pennsylvania Railroad tunnels of New York city, the ventilation of the 15½ miles of tunnels was considered a matter of first importance. In order to insure that the full amount of air desired be sup-

plied to the occupants of the cars, it was decided to deliver to the tunnels 50 cubic feet of air per minute per person, or two-thirds more than was actually required to maintain a sufficiently pure atmosphere. After due consideration the system found to be best adapted to the conditions was a forced-draft system of the same kind as used for ventilating a number of railroad tunnels going through the mountains. In this system the air is introduced in a stream of constant flow through a divided nozzle, which delivers it on each side of the tunnel through expanding outlets placed in the bench walls. These outlets

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Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "It is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

BRIDGES, CULVERIS, VIADUCTS

Ark., Sweet Home.—Fourche Drainage District, William M. Kavanaugh, president, Little Rock, Ark., will construct three concrete box culverts along Fourche Bayou near Sweet Home; estimated cost, \$2300; bids opened; construction of drainage system to reclaim 36,000 acres of land was previously noted under Little Rock; Lund & Hill, 201 W. 2d St., Little Rock, Ark., are engineers. (See "Machinery Wanted.")

D. C., Washington.—Fine Arts Commission approved plans for concrete bridge costing \$50,000 to cross Rock Creek at Q St.; seven full-centered arches of 40, 41, 42, 43, 42, 41 and 40-foot spans, with sidewalk corbels of arches about 7-foot span; these project over side of wall about 2 feet, instead of 9, as originally planned; center line of bridge will be on radius of 474 feet; greatest height of deck above valley, about 65 feet; 30-foot roadway and two 10-foot sidewalks; ornamental plaza at either end of structure; flanked at either end by two bronze bison designed by A. Palmister Proctor, sculptor, New York; general plans prepared under supervision of T. C. J. Bailey, engineer of bridges, 531 Randolph St.; appropriation authorized by Congress, \$75,000; W. V. Judson, engineer District Commissioners, will supervise construction; Glenn Brown, secretary American Institute of Architects, 1741 New York Ave. N. W., is advisory architect. (Previously mentioned.)

Fla., Cortez.—Manatee County Commissioners have plans by Wyman & Green, Bradenton, Fla., for bridge one-half mile long

across Sarasota Pass from Cortez to Cordez Beach, on Anna Maria Island. (See "Machinery Wanted.")

Md., Charlton.—Western Maryland Railroad, H. R. Pratt, chief engineer, Baltimore, Md., awarded contract to Pennsylvania Steel Co., Philadelphia, Pa., for steel bridge work on branch railroad to be built from Charlton in southerly direction about 3½ miles, crossing Potomac River into West Virginia; contract includes construction of 1175-foot steel bridge over Potomac River.

Miss., Corinth.—Business Men's Club, Rufus Jones, secretary, will construct several iron bridges on turnpike road from Corinth, Miss., to Pittsburg Landing, Tenn. (See "Machinery Wanted.")

Mo., St. Louis.—Chicago, Burlington & Quincy Railroad, W. L. Breckinridge, engineer maintenance of way, Chicago, Ill., will construct bridge across Mississippi River between Eads bridge at St. Louis and Alton bridge at Alton, Ill.

N. C., Lumberton.—Drainage Commission, Back Swamp and Jacob Swamp Drainage District, will (in addition to extensive canal construction lately noted) construct 16 wooden and 5 steel bridges complete with foundations, etc.; bids received until June 12; F. F. Wetmore, engineer; Thomas L. Johnson, attorney for drainage district. (See "Machinery Wanted.")

Okla., New Castle.—New Castle Bridge Co. will construct 2100-foot steel toll bridge; cost \$70,000; W. C. Burk, engineer in charge, Oklahoma City, Okla.; bids not advertised. (Recently noted incorporated with \$75,000 capital stock.)

Tenn., Chattanooga.—Chickamauga Quarry & Construction Co. of Chattanooga is lowest bidder at \$119,038.14 to construct reinforced concrete arch viaduct over track of Nashville, Chattanooga & St. Louis Railway and Cincinnati, New Orleans & Texas Pacific Railway at McCallie Ave.; Wilbur J. Watson, designing engineer, Cleveland, O.; Robert Hooke, City Engineer. (Call for bids lately noted.)

Tenn., Memphis.—W. H. Reed secured permit to construct culvert over Bayou Gayoso; cost \$18,000; Ferro Concrete & Construction Co., Cincinnati, O., contractor, is proceeding with construction; plans by G. M. Shaw & Co.; 30x200-foot structure.

Tex., Mt. Pleasant.—Paris & Mt. Pleasant Railroad Co., H. P. Moberly, chief engineer, Paris, Tex., recently noted (under "Tex., Paris") to construct 5000 foot trestle bridging, will also build 150-foot steel span bridge at Sulphur River.

Va., West Point.—Gresham Bridge Co., capital stock \$200,000, incorporated; will construct bridge across Mattaponi River, connecting West Point with King and Queen county; Thomas Gresham, president; C. Boice, vice-president; R. H. Bruce, secretary-treasurer, all of Richmond, Va.

CANNING AND PACKING PLANTS

Fla., Sarasota.—Sarasota Citrus Exchange will build packing plant; 60x90 feet.

Fla., Little River.—T. A. Winfield will build plant 50x80 feet for packing citrus fruits; later proposes to build addition for vegetable packing; August Geiger, Miami, Fla., is preparing plans.

S. C., Bluffton.—Snyder Bros. will enlarge cannery.

CLAYWORKING PLANTS

Tex., Bay City.—Bay City Brick & Tile Co., J. E. Kenisell, manager, Box 841, has purchased 14 acres of land and will establish stiff-mud brick and tile plant; machinery ordered; will incorporate; daily capacity, 25,000. (Recently noted.)

W. Va., Clarksburg.—Pottery.—Clarksburg Pottery Co. will manufacture sanitary ware, such as white enameled bowls, tanks, etc.; has building and equipment. (Recently reported incorporated with \$75,000 capital stock by John L. Ruhl and others.)

COAL MINES AND COKE OVENS

Ky., Benham.—Joseph D. Oliver, South Bend, Ind., purchased several thousand acres coal land from Wisconsin Steel Co., Harvester Bldg., Chicago, Ill.

Ky., Whitesburg.—Swift Coal & Timber Co. is negotiating for 20,000 acres coal and timber land on Carr's Fork of Kentucky River.

Tenn., Coalfield.—Coalfield Coal Co., capital

stock \$50,000, incorporated by A. H. Bowling, P. J. Briscoe, C. W. Henderson and others.

Tenn., Memphis.—Latura-Whitten Coal Co., capital stock \$10,000, incorporated by J. J. Latura, M. A. Whitten, Edgar Lee and others.

Tenn., Moccasin Bend.—Manufacturers Record's special correspondent in New York advises as follows: Little Sequatchie Syndicate, formed by Charles B. Eddy (president of Durham Coal & Iron Co., Chattanooga, Tenn., and New York), 65 Liberty St., New York, and associates; purchased, as holding company, 22,000 acres coal and timber land in Sequatchie Valley; engineers estimate property contains 100,000,000 tons high-grade coal; purchaser will develop; development plans include opening mines, constructing by-product coke ovens, and probably building railway; development details not determined. (Recent reports stated Durham corporation was negotiating for this property.)

Tenn., Nemo.—Tennessee Timber, Coal & Iron Co. will mine coal; offices at Harriman, Tenn., and 22 William St., New York. (See "Lumber Manufacturing.")

Tenn., Petros.—Big Brushy Coal Co., capital stock \$100,000, incorporated; Geo. P. Howard, president, treasurer and manager; Joseph P. Gaut, vice-president; L. M. G. Baker, secretary; contemplates daily output of 1000 tons in near future.

COTTON COMPRESSES AND GINS

Ark., England.—England Ice & Gin Co. incorporated; G. W. Morris, president. (See "Cottonseed Oil Mills.")

Ga., Forsyth.—Southern Cotton Oil Co. will build cotton gin; eight 80-saw gins, engines and boilers; daily capacity, 150 bales.

Ga., Montezuma.—Montezuma Manufacturing Co. will install cotton gin to increase present daily capacity to 100 bales; will also install hydraulic cotton presses.

Okla., Durant.—Inland Cotton Co. will enlarge cotton compress to double capacity; cost \$3000.

Okla., Muskogee.—Muskogee Cotton Compress Co., capital stock \$50,000, incorporated by R. T. Harris, R. J. Williams and F. E. Anderson, all of Oklahoma City, Okla., and others.

Okla., Sallisaw.—McDonald & Matthews will expend \$10,000 on plant recently noted; erect 106x30-foot ginhouse; concrete floor, frame siding, iron roof; building contractors, Norwood & Palmer, Sallisaw.

S. C., Charleston.—Oakdene Compress & Warehouse Co. (recently noted incorporated with \$150,000 capital stock by Wm. C. Miller, Richard S. Whaley and Wm. C. Bissell) awarded contract to Charleston Engineering & Contracting Co., Charleston, S. C., to construct plant on Cooper River; 400x450-foot wharf, with two 180x400-foot sheds; contractor states work to be completed by September 1; creosoted and plan piles to be used, with more than 1,500,000 feet lumber. (Same as "Maybank & Co.," noted in May to purchase river-front site and erect compress and warehouse system with capacity 100,000 bales cotton.)

Tex., Mineral Wells.—Mineral Wells Gin Co., capital stock \$15,000, incorporated by J. W. Smith, P. R. Braselton and A. R. Muirhead.

Tex., Mission.—Farmers' Independent Gin Co., capital stock \$12,500, incorporated by Fred W. Volz, M. Cronkright and T. M. Melden.

Tex., Northrup.—Gerhard Zoch will build cotton gin and sawmill.

Tex., Red River City.—Red River Ginning Co., Klamath, Tex. (recently noted incorporated with \$6000 capital stock), will operate cotton gin and grist mill; erect 50x100-foot 4000 building; S. J. Wright, president; J. W. Peterson, vice-president and manager; Geo. T. Wright, secretary; W. P. Gurly, treasurer.

COTTONSEED-OIL MILLS

Ga., Madison.—Empire Cotton Oil Co., Thomas Eggleston, president, Atlanta, Ga., will build cottonseed-oil mill to cost \$100,000.

Ky., Hickman.—Roberts Cotton Oil Co., 1101-1103 Central Bank Bldg., Memphis, Tenn., will establish branch cottonseed-oil mill; advises Manufacturers Record plans are not developed for announcement; some preliminary work done, but nothing definite.

S. C., Lancaster.—Lancaster Cotton Oil

Co. will repair cottonseed-oil mill damaged by fire at loss of \$35,000.

Tex., Corpus Christi.—Sam Primm, Fort Smith, Ark., purchased 10 acres on which to build cottonseed-oil mill.

Tex., Fort Worth.—Texas Cottonseed Products Co., capital stock \$10,000, incorporated by Hans Guldman, A. Q. Vistard-Peterson, George A. Kerner and H. Glickmann.

Tex., Post.—Double U Co. contemplates building cottonseed-oil mill; will not at present make definite plans.

Tex., Sulphur Springs.—Farmers & Ginnings Oil Mill Co. will rebuild four-press mill recently reported burned; 150x65 feet; two stories; fireproof construction; tin roof. (See "Machinery Wanted.")

DRAINAGE AND IRRIGATION

Ark., Grady.—Grady Drainage District Commissioners awarded contract to E. J. Hahn, Little Rock, Ark., at about \$50,000 to construct Grady drainage system to reclaim 18,000 acres of land; will construct main canals and two laterals 15 to 30 feet wide at bottom and 5 feet deep; land for farming; White & Watson, engineers, Pine Bluff, Ark. (Recently mentioned.)

Ark., Helena.—Beaver Bayou Drainage District Commissioners awarded contract to Canal Construction Co. of Chicago, Ill., at \$140,000 to construct drainage canals: Johnson Bayou ditch, 307,000 cubic yards; Lick Creek ditch, 533,000 cubic yards; Beaver Bayou ditch, 673,000 cubic yards; Hillsdale ditch, 85,000 cubic yards; C. B. Bailey, consulting engineer, Wynne, Ark.; J. A. Guisinger, resident engineer, Helena. (Lately noted.)

Ark., Newport.—Overcup Drainage District of Jackson and Woodruff counties organized; district comprises 22,000 acres, of which 60 per cent. is in cultivation; \$60,000 bond issue; Morgan Engineering Co., engineer, Memphis, Tenn. (B. F. Simmons and others recently noted as petitioning for formation of district.)

Miss., Greenville.—Riverside Drainage Commission (recently noted) will drain 100,000 acres in Washington county; cost about \$350,000; opens bids July 1; main canal 1561,000 cubic yards; 14 laterals, 620,000 cubic yards. (See "Machinery Wanted.")

N. C., Cleveland County.—Buffalo Drainage District No. 1 will receive complete report in about 30 days of survey recently made by F. G. Eason, U. S. drainage engineer, Charleston, S. C., assisted by Engineer Lawrence Manning of Manning-Hughes Company, Box 667, Charleston.

S. C., Hampton County.—Black and Boggy Swamps Drainage District survey will be commenced about July 1; F. G. Eason, U. S. drainage engineer, Charleston, S. C., in charge, assisted by District Engineer Lawrence Manning of Manning-Hughes Co., Box 667, Charleston. (Mr. Manning noted as member of board of viewers in previous item on organization; acreage, 75,000.)

Tex., Crystal City.—Alexander Boynton purchased Espantos Lake, adjoining Winter Garden ranch; will install steam pumping plant in lake and construct canal with lateral ditches sufficient to irrigate 1000 acres; contemplates later building concrete dams across outlet to lake so as to impound about 15 feet additional of water and irrigate entire tract of 6000 acres.

Tex., San Antonio.—Byrd Irrigation Co., capital stock \$2500, incorporated by A. H. Byrd, E. J. Buckingham and Roy Lasseter.

ELECTRIC PLANTS

Ark., Argenta.—Board of Public Affairs awarded contract to Probst & Laird of Little Rock to build 20-foot extension to electric-light and power plant; also awarded contracts for equipment, including generator, switchboard, exciter, 500-horse-power engine, two tubular boilers of 175 horse-power each, and feed-water heater; total cost, \$18,500; Theodore Sanders, Southern Trust Bldg., Little Rock, is architect. (Call for bids lately noted.)

Ark., Ashdown.—City contemplates constructing electric-light plant. Address The Mayor.

Fla., New Smyrna.—John T. Hammond contemplates building electric-light plant.

Ga., Cartersville.—City voted \$50,000 bond issue to extend electric-light system, etc.; G. W. Young, Mayor. (See "Water-works.")

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ky., Cadiz.—S. G. Ragsdale, Pembroke, Ky., is interested in organization of company to build electric-light plant; estimated cost \$29,000.

La., Franklin.—City will extend electric-light system. Address The Mayor.

Md., Kansas City.—Kansas City, Clay County & St. Joseph Railway will construct three electric substations, two of which will be on St. Joseph branch, one 12 miles from Kansas City and other at Willowbrook; third station will be at point four miles east of Liberty, on Excelsior Springs branch.

Mo., St. Louis.—St. Louis County Electric Light, Heat & Power Co., capital stock \$15,000, incorporated by David P. Leahy, Philip A. Smith, Richard J. Baldwin and Stephen J. Leahy.

N. C., Fayetteville.—Fayetteville Light & Power Co., capital stock \$150,000, incorporated by John Rurlin and Thomas Badger of Fayetteville and W. W. Randolph of New York; subsidiary to Carolina Power & Light Co. of Raleigh, N. C.

Tex., Dallas.—Texas Electric Co. (recently noted incorporated with \$100,000 capital stock by J. V. Watkins, J. J. Metcalf, A. Ragland and others) will erect large power-generating plant at some point on railway to supply power for electric traction system of interurban railways of Trinity Valley Traction Co.

Tex., Post.—Post Power Co. will erect 86x296-foot building; reinforced concrete construction; install machinery to develop 1000 horse-power; has awarded all contracts; H. W. Fairbanks, general manager. (Recently reported incorporated with \$100,000 capital stock.)

Tex., Waco.—Texas Power & Light Co. incorporators were J. F. Strickland, who will be elected president, Osce Goodwin and others of Dallas, Tex.; W. J. Neale and others of Waco; J. E. Ferguson of Temple, Tex.; S. Z. Mitchell of New York; F. P. West of Cleburne, Tex., and others. As stated lately, corporation is capitalized at \$13,000,000 and takes over Waco, Cleburne, Hillsboro, Waxahachie, Temple, Sherman and Bonham gas and electric companies recently named; financed by Electric Bond & Share Co. of 71 Broadway, New York; now preparing plans to construct \$800,000 electric plant, recently announced, to transmit electricity to cities with 200-mile radius; Phoenix Construction Co. has contract to build this power plant; has five-year contract to furnish electricity to Southern Traction Co.; will locate principal office at Dallas, Tex.

Va., Richmond.—Illuminating & Power Securities Co., capital stock \$8,000,000, chartered as holding corporation for certain lighting and power companies; offices in Mutual Bldg.; president, H. G. Buchanan of Richmond; secretary, T. R. L. Dana of Newton, Mass. Mr. Buchanan wires Manufacturers Record: "Communicate with Johnson, Clapp & Underwood, 50 State St., Boston, Mass." This Boston firm wires Manufacturers Record: "New corporation has no plan for acquisition of Virginia properties."

FERTILIZER FACTORIES

Ga., Byromville.—Farmers' Fertilizer Works, capital stock \$60,000, incorporated by S. B. Byrom, J. D. Lester and L. P. Lester.

FLOUR, FEED AND MEAL MILLS

Mo., Neosho.—Ozark Feed Co., capital stock \$10,000, incorporated by J. A. Linney, R. E. Linney and A. L. Brannock.

Tex., Red River City.—Red River Ginning Co., S. J. Wright, president, recently incorporated, will operate cotton gin and gins mill. (See "Cotton Compresses and Gins.")

FOUNDRY AND MACHINE PLANTS

Ky., Covington.—Iron Works.—Stewart Iron Works, Cincinnati, O., wires Manufacturers Record: "Will rebuild at once; greatly increase capacity; one new building 200x400 feet, three stories; another 100x200 feet, two stories; other smaller buildings; construction undecided; cost of building approximately \$200,000; cost of machinery not known at this time." (Company's Covington plant reported burned.)

La., New Orleans.—Engines.—Seager Engine Works will construct pumping station; hollow-tile building; plant will consist of four 24 hours against head of three feet cmwyppp 30-inch pumps (39,000,000 gallons per 24 hours), one 20-inch pump (26,000,000 gallons per 24 hours against head of three feet), five-kilowatt generator to furnish light and priming vacuum pump; specifications by Allen Engineering Co., Chicago, Ill.; contract awarded to Irwin D. Groak Engineer-

ing Co., 910 Monadnock Bldg., Chicago, Ill., through New Orleans Netherlands Co.

Tex., Bronson.—Logging Machinery.—Knox Lumber Co. will build plant to manufacture skidder and loader.

GAS AND OIL DEVELOPMENTS

Okla., Henryetta.—Ogenhofa Oil & Gas Co., capital stock \$20,000, incorporated by W. W. Buchanan, Wadley Kelley and J. H. Lincoln.

Okla., Sapulpa.—Lottie Oil Co., capital stock \$10,000, incorporated by Joseph Bruner, John L. Brady and Ernest B. Hughes.

Okla., Tulsa.—Carter Oil Co., capital stock \$50,000, incorporated by Ray M. Collins, Hugh King, Jr., and Donald Poak.

Tex., Galveston.—Providential Oil Co., capital stock \$35,000, incorporated by C. B. Le Clare, W. A. Phillips and J. W. H. Jones.

Tex., Humble.—Brown-Atchison Oil Co., capital stock \$10,000, incorporated by P. M. Merchant, I. W. Sparks and G. E. Kelly.

Tex., Iowa Park.—Buffalo Oil Co., capital stock \$30,000, incorporated by E. E. Dismuke, R. W. Hyde, J. T. Overboy and J. D. Overboy.

Tex., Teague.—Teague Developing Co., capital stock \$10,000, incorporated by J. F. Maher, C. E. Johnson, W. F. Storey and others; will drill for oil and gas.

W. Va., Charleston.—Flatwood Oil & Gas Co., capital stock \$50,000, incorporated by Thomas E. Drape, George W. Beuford, L. S. Thorpe and others.

ICE AND COLD-STORAGE PLANTS

Ark., England.—England Ice & Gin Co., capital stock \$25,000, incorporated; G. W. Morris, president; R. J. Lanford, vice-president; J. K. Brodie, secretary-treasurer.

Ky., Louisville.—Kentucky Cold-Storage Co., capital stock \$10,000, incorporated by Henry A. Mead, Walter A. Galloway and J. T. Sullivan.

La., New Orleans.—W. J. Hardee, City Engineer, recommended to finance committee acceptance of bid of John O. Chisolm & Co. at \$22,950 to erect cold-storage plant at Dryades Market; one story; brick; 43x117 feet; 43 stalls, each equipped with refrigerator equipment; capacity, 10 tons; Charles R. Kennedy, City Comptroller. (Call for bids lately noted.)

N. C., Fayetteville.—C. C. McAllister and M. N. Matthews will build plant to have daily capacity 40 tons ice.

N. C., Oriental.—Oriental Ice & Development Co., capital stock \$15,000, incorporated by H. A. Reel of Reelsboro, N. C.; S. W. Ferebee and E. C. Ross of Stonewall, N. C., and R. L. Woodard of Pamlico, N. C.

S. C., North Augusta.—Mutual Coal & Ice Co., capital stock \$20,000, incorporated by Charles Warren Davis, T. L. Foreman, J. L. Barksdale, A. Cranston and others.

Tex., Galveston.—Galveston Ice & Cold Storage Co. will have plans prepared by Widemann & Walsh, St. Louis, Mo., for ice and cold-storage plant; three stories; reinforced concrete; steel frame; 100x300 feet; initial capacity of ice plant 60 tons, to be increased to 200 tons; initial cold-storage capacity 250,000 cubic feet, to be increased to 500,000 cubic feet; cost of construction and machinery, \$200,000; L. Block, engineer, New York, will supervise construction. (Recently mentioned.)

Tex., Post.—Double U Co. contemplates building ice plant; will not at present make definite plans.

Va., Richmond.—Merchants' Cold-Storage & Ice Manufacturing Co. will erect cold-storage plant at 5th and Byrd Sts.; five stories; 130x120 feet; storage capacity about 75,000 barrels; cost, including site, \$250,000.

IRON AND STEEL PLANTS

Ala., Holt.—Iron Furnaces.—Central Iron & Coal Co., Waddell Catchings, president, 90 West St., New York, is reported to have awarded contracts for constructing and equipping iron furnace; will dismantle present stack for site; daily capacity, 300 tons iron; cost reported as \$300,000; also reported company will build another furnace. (Previously reported.)

Tenn., Johnson City.—Iron Furnace.—Cranberry Furnace Co., Drexel Bldg., Philadelphia, Pa., has blown in iron furnace to which repairs have been made. (Previously mentioned.)

LAND DEVELOPMENTS

Ala., Robertsedale.—Baldwin County Pecan Co., capital stock \$10,000, incorporated; will cultivate pecan trees.

Ark., Pangburn.—Ozark Fruit & Land Co.,

capital stock \$100,000, incorporated; T. L. Iron, president; E. A. Ingram, vice-president; Fay W. Tweedy, secretary-treasurer.

Ga., Colyton, P. O. at Lyerly.—Cherokee Farm & Fruit Co., capital stock \$50,000, incorporated by J. M. Bellah of Summerville, Ga., and D. G. Crabtree of Chattanooga, Tenn.

Ga., Union City.—Greater Georgia Development Co. has officers as follows: L. S. Roan, Fairburn, Ga., president; Claude Smith, Temple Court, Atlanta, secretary; F. J. Dodd and D. A. Carmichael, Union City, land agents; will develop manufacturing, business and resident section, etc., as recently stated. (Officers lately incorrectly named.)

Ky., Hopkinsville.—Florida Land Co., capital stock \$15,000, incorporated by J. C. Johnson, E. C. Radford, T. J. McKeynolds and J. D. Thompson.

La., Lake Charles.—Southwest Louisiana Land & Mortgage Co., capital stock \$250,000, incorporated. C. Brent Richard is president.

La., Plaquemines Parish.—F. G. Jonah, chief engineer construction; W. H. Rosen, chief mechanical engineer, and W. T. Ward, all of St. Louis & San Francisco Railroad, St. Louis, Mo., purchased Pearl Plantation in Plaquemines Parish, 35 miles from New Orleans; property fronts three miles on river and extends back about 40 acres; reported to expend \$30,000 for ditching, draining, planting and cultivating oranges on 60 acres.

Md., Baltimore.—Roland Park Co., 404 Roland Ave., Roland Park, Baltimore, is proceeding with plans for developments at Guilford; asking bids on 69,000 cubic yards earth excavation. (See "Machinery Wanted.")

N. C., Greenville.—Atlantic Coast Realty Co., capital stock \$100,000, incorporated by J. W. Ferrall, Lellie P. Ferrall, J. W. Ferrall (trustee) and W. Z. Norton.

S. C., Charleston.—Cornhill Terrace Co., recently noted (as "Thornhill Terrace Co.") incorporated with \$8000 capital stock, will develop 432 acres facing Ashley River and having about 900 feet frontage; A. R. Rugheimer, president and treasurer; James Allan, vice-president; J. P. Rugheimer, secretary.

N. C., Wallacetown (not a postoffice).—David Baird, Delaware Ave. and Pearl St., Camden, N. J., purchased Norva Land & Lumber Co.'s property, comprising 10,000 to 11,000 acres of timber land, 1000 acres of which is cleared farm land; will cut about 30,000,000 feet of poplar, cypress and gum timber and divide into 50 to 100-acre farms.

S. C., Charleston.—Jasper Development Co., capital stock \$25,000, incorporated; F. G. Ravenel, president; W. C. Wilbur, vice-president; W. H. Grimbail, secretary-treasurer.

S. C., Charleston.—Manufacturers' Development Co., capital stock, \$10,000, incorporated by Alfred Huger, Walter B. Wilbur and Ethel Mazyek.

S. C., Columbia.—College Place Annex Co., capital stock \$10,000, incorporated by C. P. Seabrook, Martin Stork, W. H. Champa, Harry Cante and others.

S. C., Charleston.—Charleston-Summerville Development Co., capital stock \$1000, incorporated; J. L. David, president; J. D. Harby, treasurer.

Tex., Dallas.—Co-Operative Land Co., capital stock \$10,000, incorporated by J. B. Rucker, R. J. Coke and Alex. Camp.

Tex., Houston.—John T. Brady Corporation, capital stock \$250,000, incorporated by J. W. Garrow, W. S. Hunt, Mrs. Estelle J. Brady and Mrs. Chaille J. Brady; will develop 59 acres of land south of Buffalo Bayou.

Va., Alexandria.—Middle States Building & Development Corporation, capital stock \$100,000, incorporated; T. R. Fitzgerald (of Fitzgerald & McDonnell, 412 5th St. N. W.), president; J. J. McDonnell, vice-president; J. Cohen, secretary-treasurer, all of Washington, D. C.

W. Va., Paw Paw.—Upland Orchard Co., capital stock \$10,000, incorporated by J. C. McKown and P. E. Nixon of Paw Paw, G. W. McKown, C. J. Grove and L. P. Miller of Martinsburg, W. Va.; will develop 100 acres in apples and peaches.

LUMBER MANUFACTURING

Ala., Stewart.—St. Clair Land & Lumber Co., ninth floor Brown-Marx Bldg., Birmingham, Ala., states as follows relative to recently-noted purchase: Closed trade on 1200 acres short-leaf timber; will install mill within next 90 days; capacity, 25,000 feet daily; operate drykilns and planers; possibly install six-mile railway; including railway, investment \$20,000. (Recently noted.)

Fla., Pensacola.—M. A. Quina Export Co., capital stock \$5000, incorporated by M. A. Quina, R. S. Quina and M. E. Quina.

La., Lake Charles.—Krause & Managua state have not decided on mill at Foley Spur recently noted to be rebuilt.

La., Oakdale.—Bowman-Hicks Lumber Co., Kansas City, Mo., awarded contract to Thralls & Shea of Lake Charles, La., to erect mill buildings; daily capacity to be 150,000 feet; will remove machinery from plant at Loring, La., but will install circular saw instead of present saw; Frank Shotts, civil engineer, made surveys. (Recently mentioned.)

Md., Baltimore.—Garrison Lumber & Supply Co. increased capital stock from \$10,000 to \$25,000.

Okla., Bennington.—Bennington Lumber Co., capital stock \$10,000, incorporated by W. G. Barnett and P. A. Vineyard of Bennington, W. J. Leeper of Dennison, Tex., and others.

Tex., Bronson.—Knox Lumber Co. will develop 50,000 acres timber land, as lately stated; estimated to contain 600,000,000 feet pine and 50,000,000 feet hardwood, principally white oak; begun construction 36-mile railway; will build big mills to saw and plane, with steam kilns, etc.; begun mining iron at Millam; will build factory for Knox skidder and loader; Hiram Knox is manager.

S. C., Charleston.—Mutual Land & Lumber Co., capital stock \$3500, incorporated; A. H. Silcox, president; H. Willard Silcox, secretary-treasurer.

S. C., Darlington.—W. T. Harper Lumber Co., capital stock \$5000, incorporated; J. P. Henley, president; W. E. Harper, vice-president; W. T. Harper, secretary-treasurer.

Tenn., Nemo.—Tennessee Timber, Coal & Iron Co. purchased and will develop 25,000 acres coal, iron and timber land; mine coal and iron; construct railway and 400-foot bridge on nine concrete piers across Emory River, also two smaller bridges across Island Creek; erect sawmill with daily capacity 50,000 feet lumber; general offices, in charge of S. W. Miller, general superintendent, at Harriman, Tenn.; B. C. Lacy, chief engineer, is also located at Harriman; main office, David H. Miller, treasurer, 22 William St., New York. (Previously mentioned.)

Tex., Northrup.—Gerhard Zoch will build sawmill and cotton gin.

Tex., Orange.—American Lumber Co. (main office Albuquerque, N. M.) will, it is reported, build sawmill.

W. Va., Auburn.—Auburn Lumber Co. will rebuild saw and planing mills reported burned.

METAL-WORKING PLANTS

Va., Richmond.—Metal and Machine Specialties.—Success Novelty Co. will remove plant to corner Stockton and 6th St. and install machinery to manufacture metal and machine specialties for company and for contract work; also installing sherardizing plant; machinery purchased.

W. Va., Wheeling.—Corrugating.—Wheeling Corrugating Co. will erect building; 100x20 feet; concrete and steel; fireproof.

MINING

Ala., Talladega Springs.—Marble.—Eureka White Marble Quarries, G. W. Grayson, president, Bloxi, Miss. (recently noted incorporated with \$100,000 capital stock), will develop 80 acres of marble properties; daily output not determined. (See "Machinery Wanted.")

Arkansas.—Bauxite.—Ozark Bauxite Co., capital stock \$25,000, incorporated by W. B. Beecker, S. B. Kelly, W. H. Young, J. M. Holliday and G. J. Wolf, all of Pittsburgh, Pennsylvania.

Ga., Cartersville.—Iron.—Etna Steel & Iron Co. property, 12 miles west of Cedartown, sold to Charles N. Edward and Maria N. Welsh, executors of J. Lower Welsh, Philadelphia, Pa.; reported price, \$135,000.

Mo., Joplin.—Lead and Zinc.—Alma Mining Co. incorporated to develop mines on portion of Falls City Lead & Zinc Co. tract; will erect 250-ton mill.

Mo., Joplin.—Vinegar Hill Mining Co. will build concentrating plant on Briggie & Weeks mining property lately purchased.

Mo., Joplin.—Lead and Zinc.—Goodwin & Co. will build tailing mill on Mattes land near Joplin; operation by electricity.

Mo., Webb City.—Lead and Zinc.—Oronoco Circle Mining Co. will improve mining plant; install centrifugal pump, electrically operated, with capacity 500 gallons per minute; cost \$25,000.

Mo., Webb City.—Lead and Zinc.—Miami Zinc & Lead Co., capital stock \$3000, incorporated by Temple Chapman, T. F. Lennan and Greenville T. Chapman.

Okla., Oklahoma City.—Zinc.—Zinc Proper-

ties Development Co., capital stock \$5000, incorporated by Everitt V. Higgins, Bernard J. Cloggett and L. R. Humphries.

Tenn., London—Marble.—Conversation Marble Co., capital stock \$48,000, incorporated by C. A. Nickerson (president) Nickerson Manufacturing Co., E. B. Henry, A. R. McMurry, all of Knoxville, Tenn., and others; will develop marble quarries on Tennessee River near London; has 15 acres land.

Tenn., Nemo—Iron.—Tennessee Timber, Coal & Iron Co. will mine iron; offices at Harriman, Tenn., and 22 William St., New York. (See "Lumber Manufacturing.")

Tex., Milam—Iron.—Knox Lumber Co., Bronson, Tex., will develop iron-ore property.

MISCELLANEOUS CONSTRUCTION

Ark., Lewisville—Levee.—Red River Levee District No. 1, N. D. Harrel, secretary, will construct 10 miles levee enlargement; bids received until July 2. (See "Machinery Wanted.")

Ky., Lexington—Stadium.—Ezra L. Gillis, registrar, states University of Kentucky is not contemplating erection of stadium in near future. (Recently noted.)

La., New Orleans—Wharf.—Public Belt Railroad Commission, Municipal Bldg., states New Orleans Port Commission will construct 500-foot wharf from Louisa St. down; also small storage yard; capacity of wharf and yard, 126 cars each; grading and track work to cost \$55,000. (Recently noted.)

La., New Orleans—Piers, etc.—New Orleans Terminal Co. (Frisco and Southern Railways) is reported as awarding contracts to resume construction of Chalmette slip. Louis H. Evans, chief engineer of construction, wires Manufacturers Record: "Work consists of 200,000 square feet reinforced concrete floor; 100,000 square feet concrete floor on ground; concrete piers; 60,000 cubic yards earth excavation; 400,000 cubic yards earth dredging; 5000 linear feet rolling shutters; tracks in yard and on trestle. (Previously mentioned.)"

Mo., St. Louis—Levees.—Col. C. McD. Townsend, president Mississippi River Commission, Room 1322 Liggett Bldg., states amount of \$1,500,000 appropriated by U. S. Congress (approved April 30, 1912) will, in accordance with law, be expended "To rebuild, by contract or otherwise, * * * such portions of levees on Mississippi River or tributaries as may have been or may hereafter be broken by existing flood," etc. (Previously noted as deciding to expend \$1,207,000 for bank and levee improvement.)

S. C., Beaufort—Channel, etc.—Beaufort county will dredge channel, build bulkhead, etc., in connection with constructing ferry landing on Savannah back river, in Beaufort county; channel to be 8 feet deep at mean low water, 45 feet wide and about 200 feet long; estimated cost \$1500; Joseph S. Claghorn, Beaufort, County Supervisor, received bids until June 3, but date may be extended to June 10; J. de Bruyn Kops, engineer in charge, 27 Bay St. East, Savannah, Georgia.

MISCELLANEOUS ENTERPRISES

Ga., Augusta—Publishing.—Augusta Chronicle has plans by G. Lloyd Preacher, Augusta, for building. (Recently noted to remodel building.)

Ga., Savannah—Navigation.—Bluffton-Savannah Line, capital stock \$3000, incorporated by D. W. Sinclair, Carl J. Herman and Geo. W. Lowdon of Savannah, and Abraham Patz of Bluffton, S. C.

Ky., Louisville—Engraving.—Tinsley-Mayer Engraving Co. increased capital stock from \$20,000 to \$50,000 and will enlarge engraving plant.

Ky., Louisville—Roofing and Furnaces.—W. H. Paine Roofing & Furnace Co. incorporated by W. H. Paine, Morris Paine and Susan Paine.

La., Bogalusa.—Colonial Creosoting Co. will build creosoting plant; annual capacity, 750,000 ties; awarded contract.

Md., Baltimore—Plumbing Supplies.—Maryland Plumbing Supply Co., capital stock \$10,000, incorporated by Max Cavalerechek (212 Alsquith St.), Toney Schloss and Jacob Briskman.

Miss., Jackson—Abattoir.—A. C. Crowder, Mayor, states city is considering establishment of recently-noted abattoir and desires to correspond with parties interested in franchise. (See "Machinery Wanted.")

Mo., Kansas City—Advertising.—Ad Pencil Co., capital stock \$50,000, incorporated by James B. Scott, A. H. Cole, Emil Dorn and others.

Okla., Hydro—Grain Elevator.—Farmers' Elevator Co. will rebuild burned grain elevator.

S. C., Dillon—Plumbing.—Dillon Plumbing Co., capital stock \$1000, incorporated; W. J. Adams, president-treasurer; Max Fass, secretary.

S. C., Florence—Publishing.—Times Co., capital stock \$25,000, incorporated; J. W. Williamson, president; W. R. Barringer, vice-president; E. D. Sallenger, secretary; Hartwell M. Ayer, treasurer.

S. C., Columbia—Construction.—A. E. Legare Construction Co., capital stock \$10,000, incorporated; A. E. Legare, president; Washington Clark, vice-president; E. N. Chisolm, Jr., secretary-treasurer; will contract for sewer, water-works, paving and concrete work; office address, 1302 Main St.

Tenn., Knoxville—Laundry.—Star Laundry Co., capital stock \$10,000, incorporated by V. Seilaz, L. Seilaz, John W. Greene and others.

Tenn., Nashville—Publishing.—Nashville Banner has plans by Russell E. Hart of Nashville for printing plant and newspaper office building at Eighth Ave. and Commerce St.; five stories and basement; 69½x105 feet; fireproof; brick, stone and steel.

Tenn., Chattanooga—Trunks.—G. E. MacKenney Trunk Co. will enlarge trunk factory.

Tex., Dallas—Printing and Advertising.—Johnston Printing & Advertising Co., capital stock \$32,000, incorporated by Fred E. Johnston, Joe Burnett and Gilbert H. Irish.

Tex., El Paso—Paving.—Southwestern Paving Co., capital stock \$10,000, incorporated by J. B. Brady, H. Letford and G. B. Brady.

Tex., Fort Worth—Clothing.—Stripling-

D. C., Washington—Films.—Feature Film Manufacturing Co., \$100,000 capital stock, incorporated by Harry M. Crandall, Harry Bulkley and Robt. W. Bulkley.

Fla., Jacksonville—Automobile Joints.—C. W. Birchwood of Chicago, Ill., will establish plant to manufacture patent ball joints for spark and throttle controls for automobiles; building, 30x100 feet; install automatic machinery costing \$25,000; power furnished by gasoline motors.

Fla., Tampa—Umbrellas.—Otto W. Walter, 586½ N. Ghy St., Baltimore, Md., is considering building umbrella factory.

Ga., Atlanta—Blaugns.—F. O. Rhen, Mobile, Ala. (recently noted in connection), states relative to plant previously reported as "Alabama-Mississippi Blaugs Co." to establish plant in Mobile: "Report incorrect; plant will be built in Atlanta and known as Georgia-Carolina Blaugs Co. Address C. B. Stackpole, care of Georgian Terrace, Atlanta."

Ga., Cartersville.—City voted \$50,000 bond issue to extend gas plant, etc.; G. W. Young, Mayor. (Recently mentioned.)

Ga., Savannah—Cigars.—Kelly & Co., Valdosta, Ga., contemplate establishing cigar factory.

Md., Baltimore—Confectionery.—New York Confectionery Co., 21 W. Lexington St., incorporated with \$50,000 capital stock by John H. Hitchens, William F. Hitchens and Edward I. Husted; continue established enterprise.

La., Lafayette—Creamery.—R. E. Sturges, representing Williams Construction Co. of

Mo., Kansas City—Tire Filling.—Resilio Tire Filling Co., 604 E. 15th St., capital stock \$5000, incorporated to manufacture tire-filling compound; J. Morse Griffin, president and manager; F. S. Sprague, vice-president; G. W. Haverfield, secretary-treasurer; machinery supplied.

Mo., Kansas City—Disappearing Beds.—Holmes Disappearing Bed Co., capital stock \$25,000, incorporated by O. S. Hurd, P. R. North, G. A. Hurd and W. W. North.

Mo., St. Joseph—Cloaks and Suits.—Fashion Cloak & Suit Co., capital stock \$5000, incorporated by A. D. Achtenberg, H. F. Achtenberg and M. Achtenberg.

Mo., St. Louis—Adding Machines.—New Standard Adding Machine Co., capital stock \$300,000, incorporated by Henry L. Cornet and F. B. Call of Cleveland, O.; R. H. Bouslog and R. A. Edwards of Peru, Ind., and others.

Mo., St. Louis—Cloaks and Suits.—Lentzner Cloak & Suit Co., capital stock \$30,000, incorporated; leased building at 714 Washington Ave. and will equip for manufacturing cloaks and suits.

Mo., St. Louis—Paper Pulp.—Paper Pulp Manufacturing Co., capital stock \$5000, incorporated by George F. Tittmann, Eugene C. Tittmann and William F. Heideman.

N. C., Charlotte—Car Steps.—Blake Car Step Works, capital stock \$250,000, incorporated by John S. Blake, J. L. McClintock and others; will manufacture folding car steps invented by Mr. Blake; organization of company not perfected; office at Trade and Tryon Sts.

N. C., Wilson—Gas.—Wilson Gas Co., capital stock \$100,000, incorporated by John W. Hindsdale of Raleigh, N. C.; Dennis McMonigle and J. M. Tyson of Philadelphia, Pa.

Okla., Okmulgee—Oil Refinery.—Indianola Refining Co., capital stock \$150,000, incorporated by E. E. Sechoi and Charles E. Martin of Okmulgee and C. D. Martin of St. Louis, Mo.

S. C., Charleston—Sugar Refinery.—Carolina Insurance & Securities Co., Realty Bldg., Charlotte, N. C., wires Manufacturers Record: "South Atlantic Sugar Refining Corporation has \$8,000,000 capital stock; \$2,000,000 preferred 7 per cent. and \$5,000,000 common; daily capacity, 3000 barrels sugar; work to commence at once and be completed in 12 months." (A. L. Newell, secretary and treasurer of Carolina company, purchased ownership of his company; purchase includes some stock of South Atlantic company, previously chartered.)

Tenn., Nashville—Gas.—Nashville Gas & Heating Co. filed mortgage (to Girard Trust Co., Philadelphia, Pa.) to secure bonds for \$6,000,000, of which \$2,000,000 will be issued now and balance as company adds to its properties; C. H. Gelat Company, 1127 Land Title Bldg., Philadelphia, Pa., can give information. (Nashville corporation lately mentioned as receiving 40-year franchise and acquiring properties of Nashville Gas Co.)

Tex., Post—Windmills.—Double U Co. contemplates building windmill factory; will not at present make definite plans.

Tex., South Houston—Insoles.—Dry Foot Insole Manufacturing Co. organized with Harry Gessman, president; G. Bryan, treasurer; Henry Wells, secretary; will establish plant to manufacture insoles.

Va., City Point—Powder.—E. I. Du Pont de Nemours Powder Co., Wilmington, Del., has, it is rumored, purchased 600 acres near City Point and is negotiating for 400 acres additional on which to build branch powder works.

MOTORS AND GARAGES

Ga., Macon—Garage.—Harold Banking & Savings Co. awarded contract to Holly Bros., Macon, to erect garage on 1st St.; two stories; face brick and marble front; show windows; lower floor of tiling.

Ga., Savannah.—Frank Sloat has plans for garage and dwelling. (See "Dwellings.")

N. C., Kinston—Garage.—Kinston Garage incorporated with \$1000 capital stock by William Hayes, Lloyd M. La Roque, H. C. Hines and others.

Okla., Oklahoma City—Automobiles.—W. E. Nation, vice-president of Retailers' Association, will establish factory to manufacture automobiles and motor trucks; 12,000 square feet floor space; 6000 square feet of glass; construction to permit erection of additions on three sides; initial cost \$50,000.

Tex., San Marcos—Automobiles.—San Marcos Auto Co. incorporated with \$3000 capital stock by Frank Bradley, C. L. Hopkins and J. R. De Steiger.

W. Va., Bluefield—Garage.—John L. Crockett, 101 Princeton Ave., awarded contract

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Jenkins Company incorporated by W. C. Stripling, P. Jenkins and Ida Jenkins.

Tex., Houston—Creosoting.—National Lumber & Creosoting Co., Texarkana, Ark.-Tex., will erect creosoting plant; steel-frame buildings; four-cylinder plant; large-capacity paving-block mill; location on about 25 acres at railroad junction. (Plant recently noted as to be erected by "Logan Lumber Co.")

Tex., San Benito—Laundry.—J. H. Seagle and J. W. Owen, Center, Tex., will build steam laundry.

Va., Martinsville—Printing.—Bulletin Printing & Publishing Co., capital stock \$5000, incorporated; William A. Bart, president; J. R. Gregory, vice-president; A. S. Gravely, secretary-treasurer.

Va., Petersburg—Contracting.—Petersburg Terminal Co., capital stock \$25,000, incorporated; Benjamin Harrison, president; J. N. Harrison, secretary.

MISCELLANEOUS FACTORIES

Ala., Birmingham.—St. Louis Ala-Cola Co., capital stock \$10,000, incorporated; J. T. Lowry, president, Ensley, Ala.; J. Sam Morton, vice-president; W. M. Henry, secretary-treasurer; both of Birmingham.

Ala., Mobile—Gas.—Mobile Gas Co. awarded contract to T. H. Fleming & Co. of Mobile to erect brick building; 63x105 feet; cost \$3500; plans by Hutchinson & Denham, Mobile.

Ark., Fort Smith—Drugs.—International Drug Co., capital stock \$100,000, incorporated; J. B. Smith, president; Ellery Howard, vice-president; W. L. Marley, secretary-treasurer.

Chicago, Ill., is organizing company to establish creamery.

La., Shreveport—Stirrups, etc.—Fulton Manufacturing Co., Fulton, Ky., will establish stirrup and saddle-stock factory; three buildings, 50x100 feet each; weekly capacity, 500 dozen pairs stirrups; plant cost \$40,000 to \$50,000. (Recently incorrectly noted under Ky., Fulton.)

Md., Baltimore—Asphalt.—F. E. Schneider Paving Co., Monroe and Lorman Sts., will rebuild asphalt plant recently burned; awarded contract to August Christhill & Co. of Baltimore to erect building; also awarded machinery contract.

Md., Baltimore—Vinegar.—Baltimore Manufacturing Co., Monument and Buren Sts., awarded contract to E. D. Springer, 424 S. Charles St., Baltimore, to erect addition to plants at Monument and Buren Sts. and at Bank St. and Central Ave.; each structure of brick; three stories and fireproof; plans by J. E. Laferty, 11 E. Pleasant St., Baltimore. (Recently mentioned.)

Md., Baltimore—Asphalt.—Warner-Quinlan Asphalt Co. of Syracuse, N. Y., leased four acres at Montebello Ave. and 26th St. and will erect corrugated iron buildings to be equipped for manufacturing asphalt for paving.

Md., Westport—Gas.—Consolidated Gas, Electric Light & Power Co., Lexington and Liberty Sts., Baltimore, Md., will build smokestack; height 216 feet; inside diameter at top 16 feet; buff perforated radial brick; foundation of reinforced concrete, 6 feet deep and 38 feet square, weighing about 600 tons; rest on 155 piles; cast-iron cap; total weight 1203 tons.

to P. A. Dunn to erect garage; 50x130 feet; concrete and steel construction; cost \$10,000; W. H. Campbell, engineer in charge of construction. (Recently noted.)

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Tenn., Memphis.—Southern Railway, B. Herman, chief engineer, Washington, D. C., is having plans prepared. It is reported, for roundhouses and trackage on property between Tri-State fair grounds and Bunty; also stated company is arranging to construct freight yards and houses south of Calhoun Ave. and east of Rayburn Blvd. to cost \$700,000.

Tex., Denison.—Missouri, Oklahoma & Gulf Railway Co. of Texas, William Kenefick, president, Kansas City, Mo., will build general repair shops to cost \$40,000.

Tex., San Angelo.—C. H. Webster, chief engineer Kansas City, Mexico & Orient Railway, Sweetwater, Tex., states no permanent plans have been adopted for recently-reported shops; under consideration.

ROAD AND STREET WORK

Ala., Birmingham.—City will pave portion of 19th St. with asphalt on five-inch concrete foundation; also pave gutter with vitrified brick on concrete base for width of 24 and 30 inches; H. S. Ryall, City Clerk.

Ala., Florence.—Lauderdale county defeated recently-noted bond issue; C. W. Young, clerk.

Ala., Oxford.—City awarded contract to Oxford Paving Co. of Oxford for 5000 square yards street paving. (Previously mentioned.)

Ark., Gurdon.—City will lay one-half mile of concrete walk; bids opened. Address The Mayor.

Ala., Roanoke.—Randolph county will grade, drain and surface with sand-clay or top soil State-aid road; expenditure \$10,000; W. S. Keller, State Highway Engineer, Montgomery, Ala. (See "Machinery Wanted.")

Ala., Jasper.—L. B. Musgrove is promoting construction of road from Jasper through Parrish, Oakman and Corona to Fayette county line; W. S. Keller, State Highway Engineer, Montgomery, Ala.

Ark., Little Rock.—Street Improvement District No. 189 will grade, curb, gutter and drain West 13th St. from Park Ave. to May St.; District Commissioners, W. H. Lark, chairman, receive bids until June 10; H. Levinson, engineer. (See "Machinery Wanted.")

Ark., Little Rock.—Street Improvement District No. 198 (W. 10th St.), Joseph Saxton, chairman, will grade, drain, curb and pave with wood blocks, asphalt, bitulithic, concrete, tar-bound macadam or other materials; Ford & McCrea, district engineers. (See "Machinery Wanted.")

Ark., Little Rock.—England Realty Co., 113 W. 2d St., will construct roads, sidewalks, sewers, etc., in Young's Park; Shelby England of company will receive bids until June 8; Frank M. Blaisdell, landscape architect and civil engineer, 917-918 Southern Trust Bldg., Little Rock. (See "Machinery Wanted.")

Fla., Brooksville.—Town will pave streets; cost \$36,000; \$12,000 bond issue available. Address Town Clerk.

Fla., Tallahassee.—City will construct 22,000 square yards brick paving and 12,000 feet curbing; council invites bids according to plans and specifications on file with City Engineer, J. E. Craig; bids received until June 10; \$30,000 bond issue voted. (Previously mentioned. See "Machinery Wanted.")

Ga., Newnan.—City contemplates residential street paving; E. G. Cole, chairman street committee. (See "Machinery Wanted.")

Ga., Waynesboro.—City awarded contract to A. H. McDaniel of Augusta, Ga., to construct eight miles cement sidewalks in residential section; cost \$30,000.

La., Franklin.—City will pave sidewalks; bids invited. Address The Mayor.

Md., Baltimore.—City will construct macadam roadway at Back River disposal plant, sanitary contract No. 91, and house connections across footways in District No. 15, sanitary contract No. 92; contract No. 91 calls for 600 cubic yards excavation within limits roadway, 1600 cubic yards borrow, 3100 square yards macadam and 480 linear feet brick gutter; Board of Awards receives bids until June 12; Charles England, chairman Sewerage Commission. (See "Machinery Wanted.")

Md., Baltimore.—City awarded contract to Warner-Quinlan Asphalt Co. of Syracuse, N. Y., to pave 34th St. from Greenmount Ave. to Tingles Lane, 4800 square yards, contract No. 6; Eugene E. Grannan, president Com-

missioners for Opening Streets. (Call for bids lately noted.)

Md., Frostburg.—City will grade and pave 800 feet on Beall St.; bids received until June 14; William Harvey, City Engineer. (See "Machinery Wanted.")

Miss., Booneville.—Beat No. 1, Prentiss county, voted \$50,000 bond issue for road construction. Address County Commissioners.

Okla., Oklahoma City.—Western Paving Co. is lowest bidder at \$6919.88 to pave Francis Ave. from 16th to 19th St. with sheet asphalt; C. R. Goucher, City Clerk. (Call for bids lately noted.)

Okla., Poteau.—City will improve streets; 35,300 square yards water-bound macadam, 6100 square yards asphalt-bound macadam, 9000 cubic yards grading, 22,630 linear feet concrete curbing and 28 concrete cross-drains; bids received until June 10; Muller-gren Engineering Co. is in charge. (See "Machinery Wanted.")

Tex., Calvert.—Robertson county voted \$150,000 bond issue for road construction. Address County Commissioners.

Tex., Dallas.—City awarded contract to Standard Engineering & Construction Co. of Dallas to pave Parry Ave. from Fourth to Exposition Ave. with asphalt macadam and to place curbing on either side of street.

Tex., Greenville.—Precinct No. 1, Hunt county, defeated proposed \$400,000 bond issue recently noted; Sid L. Arnold, County Clerk.

Va., LaCrosse.—LaCrosse District of Mecklenburg county will construct about 30 miles of road; bids received until June 7; P. St. J. Wilson, State Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

Tex., Port Bolivar.—Kelso & Vautrin of Galveston, Tex., are lowest bidders at \$25,172.85 to construct at Port Travis Reservation, Port Bolivar, 3500 square yards concrete pavement, 8700 square yards vitrified brick paving, 6800 linear feet concrete curbing, 2800 linear feet concrete drain with 10 catch basins, etc.; Earl I. Brown, Major, Engineers, U. S. Engineer Office, Galveston, Tex. (Call for bids lately noted under Tex., Galveston.)

Tex., Temple.—City awarded contract to Ockander Bros. of Waco, Tex., to pave N. Main St. with vitrified brick.

Va., Richmond.—City awarded contract to I. J. Smith & Co. of Richmond to pave portion of Broad St. with asphalt block; \$50,000 appropriated; Virginia Railway & Power Co. will pave with same material between tracks and two feet on either side; Charles E. Bolling, City Engineer. (Call for bids lately noted.)

Va., Richmond.—City will construct bituminous macadam driveway in Marshall Square; bids received until June 6; Charles E. Bolling, City Engineer.

Va., Rocky Mount.—Franklin County Supervisors awarded contract to grade courthouse lawn and lay concrete walks throughout grounds and along Main and Court Sts.

Va., Staunton.—South River district of Augusta county will vote July 2 on \$250,000 bond issue to improve about 70 miles of road; H. W. Holt, District Judge.

W. Va., Wheeling.—City will pave north side of 26th St. from Market to Eoff St.; bids received until June 4; also received bids until same date for excavation and concrete foundation for McColloch St. from 12th to 16th St. and Market St. from 12th to Creek bridge; D. G. Brown, Clerk.

SEWER CONSTRUCTION

Ark., Blytheville.—Sanitary Sewer Commission retained Richard C. Huston, Memphis, Tenn., to prepare plans and specifications and supervise construction of sanitary sewer system; estimated cost \$40,000; contract date not set.

Ark., Little Rock.—England Realty Co., 113 W. 2d St., will construct sewers, etc., in Young's Park; bids received until June 8. (See "Road and Street Work.")

Ark., Little Rock.—Board of Public Affairs awarded contract to Winnie Heard to construct sewers in district comprising 8th St. from Broadway to Chester St., and to Nick Penz to construct sewers in district between 14th, 19th, Izard and High Sts.; H. Levinson, Superintendent of Public Works will supervise construction.

Ga., Atlanta.—City receives bids until June 8 to construct connection of Peachtree Creek interceptor and disposal works, extension of culvert, etc., at Peachtree Creek disposal plant; R. M. Clayton, chief of construction. (See "Machinery Wanted.")

Ga., Fort McPherson.—Capt. James S. Young, Jr., constructing quartermaster,

states sewage purification plant (bids recently noted to be opened June 15) consists of 7x14-foot screen chamber, 33x45-foot hydrolytic tank, settling and dosing tanks, sludge drying bed and sprinkling bed, all of concrete construction; about 900 feet water main, fire hydrants, etc.; reconstruction portion of present sewer; construction of about 500 feet 8-inch, 50 feet of 6-inch vitrified pipe sewer; work to commence before June 30; Frank S. Husted, superintendent of construction.

Ga., Macon.—City awarded contract to Dysard Construction Co. of Atlanta, Ga., to construct six miles of 8, 10 and 12-inch sanitary sewers, with manholes and flush tanks; J. J. Gaillard, City Engineer. (Call for bids lately noted.)

Ga., Ocala.—J. B. McCrary Company of Atlanta, Ga., submitted report on construction of sewer system and estimates cost at \$16,000. (Previously mentioned.)

La., New Orleans.—City will construct reinforced concrete siphon under New Basin Navigation Canal at Broad St.; Contract 45-D; Sewerage and Water Board, F. S. Shields, secretary, receives bids until August 15. (See "Machinery Wanted.")

Md., Baltimore.—City will construct house connections across footways in District No. 15, sanitary contract No. 92, and macadam roadway at Back River disposal plant, sanitary contract No. 91; contract No. 92 calls for 22,750 linear feet vitrified pipe house connections, 18,500 linear feet relaying brick, etc., pavement, 13,000 square feet relaying granolithic, etc., pavement; Board of Awards receives bids until June 12; Charles England, chairman Sewerage Commission. (See "Machinery Wanted.")

Md., Princess Anne.—Town voted \$10,000 bond issue to construct sewers and increase water supply. Address Town Commissioners.

Mo., Doniphan.—City will construct sanitary sewer system and extend water mains; bids received until June 11; plans and specifications for sewer system on file with Frank L. Wilcox, Chemical Bldg., St. Louis, Mo., and at Ripley County Bank, Doniphan; \$16,500 bond issue previously reported voted; Buell Cable, City Clerk. (See "Machinery Wanted.")

N. C., Dunn.—City engaged Gilbert C. White of Charlotte, N. C., as consulting engineer for sewer system; estimated cost, \$35,000 to \$50,000. (Recently mentioned.)

S. C., Blacksville.—City engaged J. Newton Johnston, Florence, S. C., to make plans and estimates and supervise construction of sanitary sewer system and sewage-disposal plant. (See "Water-works.")

Tex., Calvert.—City voted \$25,000 bond issue to construct sewer system. Address The Mayor. (Recently mentioned.)

Tex., Dallas.—City awarded contract to Dallas Lime & Gravel Co. at \$6799.72 and \$2457.16, respectively, to construct storm sewer on Exposition Ave. from Commerce St. to Parry Ave. and on Parry Ave. from Exposition to Haskell Ave.

Tex., Jefferson.—Jefferson Sanitary Co., George S. Neidermeier, vice-president and general manager (recently noted incorporated) will expend \$7000 to \$8000 on sewer construction; 10, 8 and 6-inch vitrified pipe; probably no disposal plant. (See "Machinery Wanted.")

Va., Bristol.—City is proceeding (under special ordinance) with construction of about 12,000 feet sewers in residence section, and additional sewer construction is contemplated. Address The Mayor.

W. Va., Kingwood.—City awarded contract to Brooks Construction Co., Clarksburg, W. Va., to construct 19,000 feet 8 to 18-inch sanitary sewers; \$10,000 bond issue voted; J. K. Monroe, engineer; Vester B. Dunn, Mayor. (Call for bids lately noted.)

TELEPHONE SYSTEMS

Miss., Ruleville.—Burl Telephone Co., capital stock \$5000, incorporated by J. M. Riddell, J. M. Jones and T. B. Brown.

Tex., Bryan.—Bryan Telephone Co. increased capital stock from \$14,000 to \$28,000. (Recently reported to expend \$30,000 for improvements, including flashlight system.)

Va., Broadway.—Maryland Switchboard Co., capital stock \$3000, incorporated; J. M. Lohr, president; I. N. Zigler, secretary.

TEXTILE MILLS

Ala., Birmingham.—Cotton Goods.—B. B. Comer and associates have not arranged for location or perfected plans for \$500,000 cotton mill lately noted; Avondale Mills, of which Mr. Comer is president, now operating Avondale Mills at Birmingham and Central Mills, at Sylacauga, will operate new plant.

Ala., Prattville.—Cotton Duck, etc.—Prattville Cotton Mills Co. will build 48x58-foot addition of brick construction and concrete floors for clothroom and office; awarded contract to Algernon Blair, Montgomery, Ala. (Recently reported as to add new machinery costing \$50,000.)

Ga., Atlanta.—Sheeting, etc.—Exposition Cotton Mills will add 16,000 spindles, intermediates, slubbers, etc., and has awarded contracts; will probably add 200 or more looms; now making general improvements and overhauling plant.

Ga., Lafayette.—Toweling, etc.—Union Cotton Mills will, it is reported, install 24 automatic looms to replace old types; has 18,000 spindles, 500 looms, etc.

Ga., Newnan.—Cotton Yarns.—Newnan Cotton Mills will add 13,312 spindles; has awarded contracts.

Md., Ilchester.—Cotton Duck.—Thistle Mills will install additional looms; has awarded contract; preparing to install electrical drive; operates 7500 ring spindles, 72 looms, etc., by steam and water power.

N. C., Cornelius.—Cotton Goods.—R. J. Stough is planning erection of cotton mill, as lately reported; proposes to organize company.

N. C., High Point.—Hosiery.—Durham Hosiery Mills, Durham, N. C., awarded contract to T. C. Thompson & Bros., Charlotte, N. C., to build addition; cost \$15,000; three-story slow-burning, mill construction; 90x100 feet; architect-engineer, J. E. Sirrine of Greenville, S. C. (Previously mentioned.)

S. C., Greenville.—Sheeting, etc.—Brandon Mills considering addition of 10,000 spindles and 200 looms; now has 80,000 spindles and 2000 looms.

S. C., Kershaw.—Cotton Goods.—Kershaw Cotton Mill, capital stock \$200,000, incorporated by John T. Stevens, J. M. Carson, E. D. Blakeney and L. T. Gregory of Kershaw and Leroy Springs of Lancaster, S. C.

N. C., Shelby.—Cotton Cloth.—Ella Manufacturing Co. will soon award contract to build addition; has ordered 5184 ring spindles, 126 looms, etc., to double capacity; architect-engineer in charge; J. E. Sirrine of Greenville, S. C. (Recently mentioned.)

S. C., Ware Shoals.—Print Cloth, etc.—Ware Shoals Manufacturing Co.'s additional building is for operatives' welfare and amusement, and not for manufacturing purposes. (Recently reported.)

Tenn., Ridgedale.—Mercerizing Plant.—A. G. Thatcher, president; W. L. Verlender and Eldridge McFarland, directors, of Coosa Manufacturing Co., Piedmont, Ala., are committee appointed by stockholders of company named to plan organization of about \$75,000 company to build mercerizing plant; weekly capacity, 26,000 to 25,000 pounds; will mercerize yarns from Coosa company's mill. (Lately mentioned planned by Mr. Thatcher and associates.)

Tex., Post.—Sheeting.—Postex Cotton Mills (not Post Cotton Mills as heretofore stated) awarded all contracts for plant; 19x28, 10x24 and 59x103-foot buildings; reinforced concrete construction throughout; cost \$100,000; contractor, Unit Construction Co., St. Louis, Mo.; machinery will include 10,000 spindles and 180 broad looms; product, bleached and finished bed sheets. (Previously reported.)

W. Va., Wheeling.—Calico.—J. L. Stifel & Sons awarded contract to Charles D. Keyser, Bellaire, O., to build addition; three stories; 100x125 feet; reinforced concrete construction; architect, C. W. Bates of Wheeling. (Lately mentioned.)

WATER-POWER DEVELOPMENTS

Ark., Berryville.—North Arkansas Power Co., I. R. Packard, engineer in charge, will invest \$325,000 for hydro-electric plant on King's River; construct reinforced concrete dam 30 feet high by 400 feet long, powerhouse of reinforced concrete, 20 miles of electrical transmission lines, etc.; machinery will include four umbrella type three-phase alternating generators (top thrust bearings 2400 volts), transformers, lightning arresters, choke coils, motor, generator set, four turbine wheels (330 horse-power each) with governors, etc.; develop about 1400 horse-power. (Recently mentioned.)

Md., Conowingo.—Susquehanna Power Co., George R. Willis, president, 213 Courtland St., Baltimore, Md., has its engineer preparing data relative to construction of hydro-electric plant on Susquehanna River; will develop large amount horse-power for transmission by electricity; James H. Harlow is chief engineer, office at Darlington, Md. Mr. Harlow is also president of James H. Harlow Company, engineers, 3 E. Lexington St., Baltimore, Md.

ton St., Baltimore, Md. (Previously reported organized, etc.)

Md., Princess Anne.—Town voted \$10,000 bond issue to increase water supply and construct sewers. Address Town Commissioners.

Mo., St. Louis.—Mississippi River Power Distributing Co., C. S. Ruffner, general manager, has plans for transformer station; two buildings of brick and reinforced concrete; 60x200 and 60x140 feet; plant to cover four acres; will receive electricity from transmission system of Mississippi Power Co. (hydro-electric plant at Keokuk, Iowa) and distribute in and around St. Louis; transform from 110,000 to 13,200 volts. (Previously mentioned.)

N. C., Shelby.—Ladshaw & Ladshaw, engineers, Spartanburg, S. C., are reported interested in proposition to construct hydro-electric plant at Suttlemyre Shoals near Shelby.

WATER-WORKS

Ala., Birmingham.—City Commissioners will consider resolution instructing W. G. Kirkpatrick, City Engineer, to report on preliminary plan on location and construction of water-works; \$5,000,000 bond issue proposed.

Ark., Ashdown.—City contemplates constructing water-works. Address The Mayor.

Fla., Key West.—Prof. J. M. Murphy will erect water-purifying plant; install motors, generators, etc.; machinery ordered. (City recently stated to extend water system.)

Ga., Cartersville.—City voted \$50,000 bond issue to extend water-works, electric-light and gas systems and improve schools; water-works plant to have capacity of 1,000,000 gallons in 20 hours; filtering plant; cost not decided; G. W. Young, Mayor. (Recently noted. See "Machinery Wanted.")

Ga., Jackson.—City will extend water-works. W. E. Merck is superintendent of system.

Ky., Harlan.—City contemplates constructing water-works. Address The Mayor.

La., Franklin.—City will extend water system. Address The Mayor.

Mo., Doniphan.—City will extend water mains and construct sanitary sewer system; bids received until June 11; \$16,500 bond issue previously reported voted; Guell Cable, City Clerk. (See "Machinery Wanted.")

Mo., St. Louis.—City contemplates constructing high-pressure pumping station for downtown fire protection; E. E. Wall, Water Commissioner, recommends location of plant at 1st and Chestnut Sts. with 36-inch main leading to it from Bissell's Point station, and estimates cost at \$1,231,951.

Ozla., Cheyenne.—City will construct water-works, etc.; \$60,000 of bonds to be issued. Address The Mayor.

S. C., Blacksville.—City engaged J. Newton Johnston, Florence, S. C., to make plans and estimates and supervise construction of water-works and sewer systems; include pumping station, distribution system, boilers, pumps, reservoir, deep wells, tower and steel tank; also sanitary sewer system and disposal plant; probably ready to let work by August 1.

Tenn., Dayton.—Water-works committee, John A. Dutton, chairman, is proceeding with water-works plans; cost \$25,000; will erect pumping station; M. P. Flynn & Co., Chattanooga, Tenn., have contract for mains and for cement reservoir of 200,000 gallons capacity; plans by G. W. Pearsall, Knoxville, Tenn.; machinery bids not yet opened. (Bids on pipe, etc., recently noted.)

WOODWORKING PLANTS

Ark., Strong—Staves.—Strong Stave Co., capital stock \$10,000, incorporated by W. R. McDonald, H. A. Van Tassel, C. K. Brunson and others.

Ga., Atlanta—Vehicles.—Deere & Co., Moline, Ill., advise Manufacturers Record that company has no plan contemplating establishment of recently-noted factory; buggy and carriage plant was offered for company's purchase.

Ga., Columbus.—Showcases.—National Showcase Co. will build additional story to plant; reinforced concrete piers.

Ga., Savannah—Columns, etc.—L. D. Stratton of Savannah, J. C. Henderson of Cincinnati, O., and others will establish plant to manufacture wooden columns, posts, chair rounds, etc.

La., Shreveport—Tables, Boxes, etc.—M. L. Hudson Lumber Co. will build plant to manufacture kitchen tables, boxes, etc.; estimated cost, \$15,000.

N. C., High Point—Chairs.—Best Chair Co. will rebuild plant recently reported burned.

Tex., Houston—Showcases, etc.—Burge Manufacturing Co. incorporated with \$20,000 capital stock to manufacture showcases, bank, bar, office, hotel and drug-store fixtures, etc.; acquired two-story brick factory building 200x75 feet; factory site comprises two acres; R. A. Burge is president and general manager; C. H. Myers, vice-president; C. D. Woodburn, secretary-treasurer; O. H. Hebbelen, superintendent.

Tex., Paris—Crates.—Cummer Manufacturing Co., J. K. Warren, manager, has placed machinery order for plant recently noted to be rebuilt; build 74x146-foot structure; erection by company.

Va., Petersburg—Veneer, etc.—Petersburg Rim & Veneer Co. will rebuild woodworking plant reported burned at loss of \$40,000.

BURNED

Ala., Bessemer.—Residence occupied by D. L. Harris and J. Nettles and owned by Mr. Duncan.

Ala., Montgomery.—American Agricultural Chemical Co.'s sulphuric acid plant burned; loss \$75,000 to \$100,000; main office at 2 Rector St., New York.

Ark., Bigelow.—Residence of Tip Cox of Hample & Lawson Mercantile Co.; loss \$5000.

D. C., Washington.—Frank B. Brandegee's residence at 1521 K St. N. W. damaged; loss \$4000.

Fla., Fort Lauderdale.—Wheeler Mercantile Co.'s store, loss \$10,000; Stranahan & Co.'s building, loss \$65,000; Everglades Grocery Co.'s store, loss \$15,000; Postoffice; Fort Lauderdale Pharmacy; Pioneer Realty Co.'s building; C. Gutchin's bakery; Johnson Millinery Co.'s store; Herald Publishing Co.'s plant; C. G. Rhodes' residence; total loss about \$200,000.

Ga., Atlanta.—Coward Auto & Accessory Co.'s garage at 147 Edgewood Ave. damaged; loss on building \$6500.

Ga., Forsyth.—T. C. Porch's residence; Chapman & Fletcher's hotel; total loss \$9000.

Ky., Covington.—Stewart Iron Works at 17th and Madison Sts. damaged; estimated loss, \$125,000.

Ky., Kuttawa.—Quiggins & Tinsley's hickory-handle mill; loss \$4000.

Ky., Fulton.—Mrs. J. L. Hornbeak's residence; loss \$7000.

Ky., Lebanon Junction.—G. N. Roney's store was not burned in recent fire. (Previous report incorrect.)

Ky., Taylorsville.—Cotton & Tichenor's livery stable; loss \$10,000.

La., Crowley.—Charles Calamira's residence; loss \$4500.

Md., Baltimore.—F. E. Schneider Paving Co.'s asphalt plant at Monroe and Lorman Sts.; estimated loss, \$50,000.

Md., Baltimore.—McDowell, Pyle & Co. state their building was not burned, as recently reported.

Miss., Port Gibson.—J. G. Spencer's residence; loss \$10,000.

Mo., St. Louis.—Delmar Villa, including band stand, cafe, etc.; loss about \$10,000; J. C. Jannopoulos, manager.

Mo., St. Louis.—United Railways Co.'s wash shed at Vandeventer and Park Aves.; loss on building \$10,000.

N. C., Belhaven.—Interstate Cooperage Co.'s plant; loss about \$100,000.

N. C., Salisbury.—H. C. Grubb's building, loss \$10,000; structure was occupied by Salisbury Post, loss \$15,000; J. C. Doub's job printing plant, loss \$4500, and M. L. Jackson, meat market, loss \$5000.

N. C., Washington.—Interstate Cooperage Co.'s box factory, kiln and two lumber sheds; estimated loss \$100,000.

N. C., Winston-Salem.—Stewart Bros.' five-story building and job-printing plant; loss \$45,000.

Okla., Durant.—John Gumm's residence; loss \$3500.

Okla., Guymon.—R. S. Cox's drug store; loss \$9000.

Okla., Hydro.—Farmers' Elevator Co.'s grain elevator.

S. C., Blackburg.—Iron City Hotel; O. H. Sarratt's building; O. A. Osborne's building; A. H. Pollock's two buildings; Bank of Blackburg's building; total loss about \$75,000.

S. C., Lancaster.—Lancaster Cotton Oil Co.'s cottonseed-oil mill damaged; estimated loss \$35,000.

Tenn., Memphis.—Memphis Cotton Oil Co.'s cotton gin in New South Memphis damaged; loss about \$4000.

Tenn., Rockwood.—Miss Della Smith's dwelling at Post Oak; loss \$3500.

Tenn., Erwin.—Duncan Furniture Co.'s building; loss \$5000.

Tex., Arlington.—Building owned by Mike Ditto; loss \$7000.

Tex., Beeville.—J. M. Teague's residence; loss \$5000.

Tex., College Station.—Agricultural and Mechanical College, loss \$75,000; O. B. Colquitt, Governor, Austin, Tex.

Tex., Groesvenor.—Public school building. Address The Mayor.

Tex., Holland.—J. H. Underwood's building, loss \$4000; C. J. Wilkeson's building, loss \$3000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—Harry Wardman, 1342 New York Ave. N. W., will erect apartment-house beyond Calvert St. and Connecticut Ave. bridges; cost \$200,000.

Fla., Lakeland.—S. M. Stephens is having plans prepared for 24-room apartment-house at Iowa Ave. and Lime St.

Fla., Miami.—Miller-Dunn Company will erect apartment-house on Avenue D and 9th St.; four stories.

Fla., St. Petersburg.—Ed. T. Lewis is having plans prepared for store and apartment building. (See "Stores.")

Fla., St. Petersburg.—Vincent Ridgely and R. W. Ridgely of Eureka Stone & Paving Co. will erect apartment-house on 2d St. between Third and Fourth Aves. north; 40x80 feet; two stories; concrete blocks; eight apartments; cost \$7000.

Ga., Savannah.—Miss Jane C. Heyward is having plans prepared by Julian de Bruyn Kops, Savannah, for apartment-house on 33d St., between Bull and Drayton Sts.; concrete construction; semi-fireproof.

Ga., Savannah.—A. P. Solomon, Sr., will, it is reported, erect apartment-house at 25th and W. Broad Sts.

Mo., Kansas City.—H. B. Hedrick will erect brick apartment-house at 3434 Jefferson St.; cost \$4000.

Mo., Kansas City.—J. W. Coleman will erect store and apartment-house; cost \$5000.

Mo., St. Louis.—Edbert Realty Co. will erect six three-room apartments on Magnolia Ave.

Mo., St. Louis.—Phil F. Busack will erect apartment-house on Natural Bridge Rd.

Mo., St. Louis.—J. McIntosh will erect apartment-house on McPherson Ave.

Mo., St. Louis.—Francis Construction & Realty Co. will erect apartment-house on Laurel Ave.

Mo., St. Louis.—C. A. Saylor will erect apartment-house on Ashland Ave.; cost \$8000.

Mo., St. Louis.—Mrs. Margaret King will erect two five and six-room single apartments on Minerva Ave.

Mo., St. Louis.—Hackman & Co. will erect two two-story tenement-houses at 4312-18 Page St.; cost \$10,000.

Mo., St. Louis.—Chris. Kundsén will erect three-story tenement-house at 6007 Berlin St.; cost \$16,000.

Mo., St. Louis.—Simon Zeitler will erect tenement-house at 5468 Chouteau St.; two stories; cost \$5100.

Mo., St. Louis.—Joseph Trenkle, Jr., will erect two two-story tenement-houses at 4333-47 Newstead St.; cost \$10,600.

Mo., St. Louis.—L. Gaertner will erect two-story tenement-house at 3964 Lexington St.; cost \$5500.

Mo., St. Louis.—F. Besdeck will erect two-story tenement-house at 3012 Nebraska Ave.; cost \$4000.

Mo., St. Louis.—Mrs. C. M. Doran will erect two-story tenement-house at 6022 Berlin St.; cost \$5000.

Mo., St. Louis.—V. E. Rhodes will erect three-story tenement-house at 5931 Washington St.; cost \$12,900.

Mo., St. Louis.—M. W. Wotli will erect tenement-house at 3403 Winnebago Ave.; two stories; cost \$3900.

Mo., St. Louis.—A. Dilschneider will erect two-story tenement at 2129 Allen St.; cost \$4500.

Mo., St. Louis.—William Cuba will erect two two-story tenement-houses at 3151-57 Michigan Ave.; cost \$10,000.

Tex., Newton.—Western Naval Stores Co.'s turpentine distillery; loss \$5000.

Tex., Temple.—C. W. Wilson's building, loss \$25,000; building owned by J. S. McCelvey and L. M. Chattin, loss \$12,000.

Va., Petersburg.—Petersburg Rim & Veneer Co.'s plant; loss \$40,000.

Va., Roanoke.—Huff & Cook's corn and flour mill and grain warehouse; loss \$15,000 to \$20,000.

Va., Sealston.—Robert Bullard's grist mill.

Va., Suffolk.—Holland-Beaman Company's storage warehouse; loss \$18,000.

W. Va., Auburn.—Auburn Lumber Co.'s saw and planing mills.

Mo., St. Louis.—George W. Martin will expend \$500 to erect two-family apartment-house; 27x58 feet; fireproof construction; hot-water heat; electric lighting; tar and gravel roof. (Recently noted.)

Mo., St. Louis.—C. E. Land will erect two tenement-houses at 4155-75 Farlin Ave.; two stories; cost \$7000.

Mo., St. Louis.—C. A. Saylor will erect apartment-house on Ashland Ave. west of Marcus Ave.; cost \$8000.

Mo., St. Louis.—Martin Augustine will erect two-story tenement-house at 3510-10A Junata Ave.; cost \$5800.

S. C., Charleston.—Frank Read will erect two stores and double apartment at King and Spring Sts.; three stories; cost \$17,000.

S. C., Charleston.—Rodney Real Estate & Improvement Co. will erect apartment-house on Rutledge Ave.

S. C., Charleston.—A. W. Litschgi, Jr., will erect apartment-house at 201 Broad St.

Tex., Dallas.—S. P. Rice will erect two-story apartment-house and business building at 1331-35 Peak St.; cost \$13,500.

Tex., Houston.—Murray B. Jones has plans by Mauran & Russell, St. Louis, Mo., to erect apartment-house at Dallas and Fannin Aves.; three stories; 150 feet on Fannin Ave.; 15 apartments of four and five rooms each.

Va., Norfolk.—J. H. Cofer opened bids to erect apartment-house; R. H. Richardson & Son, Norfolk, are lowest bidders at \$81,547; plans by Lee & Diehl, Norfolk, call for six-story structure; pressed brick; terra-cotta and stone trimmings; tile roof; tile and marble block floors. (Previously noted.)

W. Va., Charleston.—Union Building Co., incorporated with \$375,000 capital stock by Samuel Stephenson, J. A. Holley, Peter Carroll and others; will probably erect apartment-house.

ASSOCIATION AND FRATERNAL

Ala., Gadsden.—Apollo Lodge, Independent Order of Odd Fellows, will erect lodge building; 50x75 feet; two stories; brick; cost \$5000; W. T. Murphree, J. W. Hardiman and others, building committee. (Recently noted.)

Fla., Seffner.—Ancient Free and Accepted Masons of Thonotosassa, Fla., will erect lodge building at Seffner; Albert W. Gilchrist, Tallahassee, Fla., grand master.

Ga., Atlanta.—M. M. Jackson, chairman building committee, has plans by H. H. Hussey of Shattuck & Hussey, Chicago, Ill., for building; accommodations for 4000 to 5000 members; four gymnasiums, with separate baths, swimming pools, etc., for various classes; Marion M. Jackson, chairman of building committee.

Md., Frederick.—Bids received until June 4 by Pythian Castle Association for Mountain City Lodge No. 29, Knights of Pythias, to erect Pythian Castle; French Renaissance style; gray brick; terra-cotta trimmings; towers; terrazzo floor in vestibule; club-room to seat 200 people; lodgeroom to seat 200; bowling alleys, shower baths, etc., in basement; reinforced concrete basement piers with ribbed steel for grillage; steel beams and girders over all openings; firewalls; metal ceiling in basement; sanitary drinking fountains; double flooring with layer of deadening felt between; plans by Bernard Kepner, Frederick. (Previously noted.)

Miss., Gulfport.—Benevolent Protective Order of Elks will erect lodge building; three stories; brick; 50x100 feet; gymnasium and swimming pool in basement; 14-foot gallery fronting each story; cost \$20,000 to

\$25,000; Dennis Burns, T. J. B. Keller, S. E. Naylor and others, building committee.

Okl., Checotah.—Independent Order of Odd Fellows awarded contract to increase height of lodge building to three stories; 50x100 feet; will provide lodgeroom 50x60 feet; banquet-room 26x35 feet; parlor 16x22 feet; kitchen 12x16 feet; ten lockers each 3x5 feet; two lavatories and toilets; will make provision for installing elevator.

Tenn., Lebanon.—Lotus Lodge, Knights of Pythias, will erect lodge building; cost several thousand dollars.

Tex., Palestine.—J. P. Angell states plans for Knights of Pythias lodge and business building will be matured in about 60 days; 50x100-foot structure. (Recently noted.)

Tex., Wichita Falls.—Ancient Free and Accepted Masons will erect lodge building; two or three stories.

Va., Staunton.—Benevolent Protective Order of Elks has plans by Holmboe & Lafferty, New York and Empire Bldg., Clarksburg, W. Va., for Elks' home; brick and terra-cotta; bids asked June 14 and will be closed two weeks later. (Previously noted.)

Va., Portsmouth.—Atlantic Lodge No. 24, Knights of Pythias, has not selected architect to prepare plans for lodge building; 30x45 feet; brick and stone; cost \$8000 to \$10,000. (Recently noted.)

BANK AND OFFICE

Ala., Birmingham.—Jefferson County Savings Bank, Eugene Ensien, president, will erect bank and office building at Second Ave. and 21st St.; reported as to be 12 to 16 stories; total investment about \$1,000,000. Bank wires Manufacturers Record: "Details not yet completed."

D. C., Washington.—Harry Wardman, 1342 New York Ave. N. W., will erect store and office building.

Ga., Milledgeville.—D. S. Sanford will expend \$8000 to erect office and store building recently noted. (See "Stores" and "Machinery Wanted.")

Ky., Frankfort.—United American Insurance Co. purchased seven-story building and will not erect structure previously noted.

Ky., Lexington.—Fayette National Bank is having plans prepared by McKim, Mead & White, 160 Fifth Ave., New York, for bank and office building at Upper and Main Sts.; 12 to 15 stories; steel construction; fireproof; stone and brick; terra-cotta trimmings. (Previously noted.)

La., New Orleans.—American Sugar Refining Co. will erect office building; three stories; 80x50 feet; reinforced concrete; fireproof construction; heating, lighting, etc., included in general contract; plans by Dibold, Owen & Goldstein, New Orleans. (Recently noted.)

La., Thibodaux.—Bank of Lafourche, K. J. Braud, cashier, contemplates making improvements to bank building; additional floor space of 850 square feet; install new fixtures, burglar-proof screw door safe and 500 safety deposit boxes; vault will be 20x20 feet in the clear.

Md., Baltimore.—Western Maryland Railroad has plans by Emory & Nussear, 415 Professional Bldg., Baltimore, for addition to Hillen Station on Exeter St. for American Express Co.'s offices; two stories; brick; contractors estimating are J. J. Walsh, 1533 Maryland Ave.; J. Henry Miller, 108 Dover St.; Singer-Pentz Company, 600 Equitable Bldg., and John Cowan, 106 W. Madison St., all of Baltimore.

Miss., Jackson.—R. W. Millsap is having plans prepared by R. H. Hunt, Chattanooga, Tenn., for bank and office building; six stories; cost \$100,000 to \$125,000.

Miss., Leakesville.—James Van Note of Lucedale, Miss., will erect two-story brick or concrete bank building.

N. C., Henderson.—First National Bank will erect bank building.

N. C., Littleton.—Bank of Littleton, J. H. Harrison, president, has plans by Frank B. Simpson, Raleigh, N. C., and M. S. Davis, associate architect, for bank building; brick; mill construction; cost \$4000.

N. C., Raleigh.—North Carolina Cotton Oil Co. will erect warehouse and office building. (See "Warehouses.")

S. C., Columbia.—International Harvester Co. of America, Chicago, Ill., will erect no buildings at present. (See "Warehouses.")

S. C., Fairfax.—Bank of Fairfax will erect building; details not determined. (See "Machinery Wanted.")

Tenn., Nashville.—Tennessee Trust Co. will remodel building at 306 Third Ave. North; cost \$7000.

Tex., Corpus Christi.—Desel-Boettcher

Wholesale Grocery Co. will erect office building and warehouse; brick; fireproof; cost \$25,000.

Tex., McKinney.—First National Bank will erect bank building; two stories; fireproof; reinforced concrete; Bedford stone trimmings; 40x30 feet. (Previously noted.)

Va., Norfolk.—Alvah H. Martin is reported as to erect office building at Granby and Washington Sts.; seven stories. Mr. Martin advises has not decided on plans.

Va., Pulaski.—Pulaski Mining Co., Rowland F. Hill, manager, will erect \$12,000 concrete and brick office and laboratory; 43x61 feet; steam heat; electric lighting; slate roof; plans by company.

CHURCHES

Ala., Ensley.—Ensley Christian Church will erect edifice; cost \$12,500. Address The Pastor, Ensley Christian Church.

Fla., Kissimmee.—Methodist church will erect edifice. Address The Pastor, Methodist Church.

Fla., Summerfield.—Catholic congregation will erect edifice. Address The Pastor, Catholic Church.

Ga., Ocilla.—J. A. Ansley states Baptist edifice will be of brick with slate roof; cost \$20,000; Park A. Dallis, architect, but plans not prepared; building arrangements indefinite. (Recently noted.)

Ky., Danville.—Building committee of Christian Church, Augustus Rogers, chairman, will receive bids until June 18 to erect edifice; plans and specifications on receipt of certified check for \$25, payable to Fred Harris, treasurer.

Mo., St. Louis.—St. Peter's Church, Rev. David C. Garrett, pastor, has plans by Kivas Tully of Tully & Clark, St. Louis, for tower on edifice; cost \$8000.

N. C., Murphy.—Methodist Church, Rev. Dr. Z. Paris, pastor, will erect edifice; cost at least \$20,000.

N. C., Spencer.—Lutheran congregation, Rev. Dr. Geo. H. Cox, pastor, will erect edifice.

S. C., Sumter.—Washington Street Baptist Church has plans by Sayre & Baldwin, 405 Bleckley Bldg., Anderson, S. C., for edifice.

Tenn., Knoxville.—Grove City Baptist Church will open bids August 1 to erect edifice; 50x32 feet; hot-air heat; electric lighting; shingle roof; cost \$4000. Address The Pastor, Grove City Baptist Church. (Recently noted to erect parsonage.)

Tex., Dallas.—Cumberland Street Presbyterian Church, Rev. Glenn L. Sneed, pastor, will erect edifice at 10th and Cumberland Sts., Oak Cliff; W. P. Maloney, chairman of building committee.

Tex., Greenville.—Kavanaugh Methodist Church will erect edifice; cost \$40,000. Address The Pastor, Kavanaugh Methodist Church.

Tex., Houston Heights.—Houston Heights Christian Church will erect edifice at Sixteenth and Rutland Aves.; bungalow style. Address The Pastor, Houston Heights Christian Church.

Va., Mt. Clinton 1. R. Station, Harrisonburg.—Cook's Creek Presbyterian congregation, Rev. H. A. Young, pastor, awarded contract to Shrum Bros., Dayton, Va., for brick work and P. Swope Suter of Mt. Clinton for carpenter work for proposed edifice; pressed brick; 43x52 feet; Sunday-school room constructed so it may be thrown into main auditorium; seating capacity for 500; cost \$7000 to \$8000.

CITY AND COUNTY

Ala., Birmingham.—Jail, etc.—Jefferson County Board of Revenue has plans for jail and courthouse. (See "Courthouses.")

Fla., Gainesville.—City Hall.—City plans to erect city hall. Address The Mayor.

Fla., Jacksonville.—Central Fire Station.—City will erect proposed central fire station. Address The Mayor.

La., New Orleans.—Library.—City will erect addition to main Carnegie Library at cost of \$25,000 and erect branch Carnegie Library for negroes; cost \$25,000; James H. Dillard, president of New Orleans Public Library Board.

N. C., Winston-Salem.—Fire Station, etc.—City is having plans prepared by Willard C. Northrup, Winston-Salem, to erect fire station, jail and town hall recently noted; two stories; six steel cells; ordinary construction; cost \$10,000. (See "Machinery Wanted.")

Tenn., Memphis.—Hospital.—City plans to erect hospital for contagious diseases; cost \$25,000; Walk C. Jones, hospital architect, Memphis.

Mo., Kansas City.—Fieldhouse.—Park Commissioners accepted plans by Ben Luschez of A. Van Brunt & Co., Kansas City for fieldhouse; fireproof; reinforced concrete; exterior of tapestry brick with green tile roof; 47x164 feet; cost \$50,000; will contain gymnasium, assembly-room, library, bath, etc. (Recently noted.)

Tex., Dallas.—City Hall.—Barnett, Haynes & Barnett, St. Louis, Mo., withdrew as consulting architects for city hall. (Recently noted.)

Tex., Dallas.—Hospital.—City Commissioners will have plans prepared by Hubbell & Greene, Dallas, for city hospital; cost about \$85,000. (Recently noted.)

Tex., Galveston.—Jail.—Galveston county is having plans prepared by Leo Desjardins, Galveston, for jail; four stories; capacity for 40 prisoners; R. W. Wolston, chairman of building committee. (Previously noted.)

Tex., Houston.—Fire Station.—City will receive bids to erect proposed Westmoreland fire station; cost \$15,000. Address The Mayor.

Tex., Nacogdoches.—Jail.—F. P. Marshall, County Judge, will receive bids until June 10 to erect two-story reinforced concrete and brick jail, including cells, heating, plumbing and wiring; certified check for \$500; plans and specifications at office of Lang & Witchell, architects, 523 Wilson Bldg., Dallas, Tex., and of Judge Marshall at Nacogdoches.

Tex., Pecos.—Library.—Pecos Carnegie Public Library, B. R. Stine, chairman, will receive bids to erect library; plans and specifications at office of Pecos Commercial Club.

Va., Norfolk.—Public Buildings.—City will expend \$1,500,000 (not \$100,500, as recently stated) to erect civic center buildings lately described; plans by Rosell Edward Mitchell, 510 Dickson Bldg., Norfolk.

COURTHOUSES

Ala., Birmingham.—Jefferson County Board of Revenue has plans by H. B. Wheelock, Birmingham, and A. Ten Eyck Brown, consulting architect, 607 Forsythe Bldg., Atlanta, Ga., for courthouse and jail; 10 stories; 125x200 feet; fireproof construction; jail and prisoners hospital on top floor; to contain nine courts, etc.; work to begin immediately. (Board of Revenue recently noted as contemplating \$1,000,000 bond issue for courthouse and jail.)

Ky., Harrodsburg.—Mercer County Commissioners will receive bids on regular forms only, furnished by County Clerk, until June 20 for extension, addition and repairs to courthouse; certified check for \$2000, payable to John W. Hughes, County Judge; bidders to state number of working days required to complete work; also number of buildings of this character erected by them, cost and location of such buildings and other information as will establish their experience and qualifications; bids for work only as a whole; plans and specifications at office of County Clerk at Harrodsburg and Andrew J. Bryan, architect, Realty Bldg., Louisville, Ky. (Recently noted.)

Okl., Cherokee.—Alfalfa county defeated bond issue for \$100,000 to erect courthouse. Address County Commissioners. (Recently noted.)

Tex., Cleburne.—Johnson County Commissioners will erect courthouse to cost \$200,000.

DWELLINGS

Ala., Birmingham.—David Roberts, Jr., will erect two-story frame residence at Grandview Ave. and Cliff Rd.; cost \$13,000.

Ala., Birmingham.—Mrs. Ella L. Roden will erect dwelling at Mizama Ave. and 27th St.; brick; cost \$20,000.

Ala., Birmingham.—C. O. Ebersol will erect two two-story frame residences; cost \$3750.

Ala., Birmingham.—M. C. Lowner will erect two-story frame residence at Princeton Ave. and Green St.

Ala., Montgomery.—W. L. Brown will erect two-story dwelling at 15 Burton Ave.; cost \$3800.

Ark., Highland.—Bert Johnson will, it is reported, erect 100 dwellings.

Ark., Little Rock.—Crouch Bros. will erect two-story frame dwelling at 100-04 Midland Ave.; cost \$4500.

Ark., Little Rock.—E. J. Clancy will erect three dwellings at 2722 W. 6th St. and 3918 and 3922 W. 9th St.; cost \$3000 each.

D. C., Washington.—W. R. Powell, 3030 N. St. N. W., will erect residence at 3332 Legation St. N. W.; cost \$5500.

D. C., Washington.—Teresa M. Saul, 1358 Irving St. N. W., will erect 22 two-story dwellings at 1362-78 C St. and 310-34 14th St. N. E.; cost \$24,200.

D. C., Washington.—A. C. Moses, 1100 P St. N. W., will erect four two-story dwellings in 100 block E St. S. E. to cost \$6000, and one at 2329 E St. S. W.; cost \$6000.

D. C., Washington.—E. P. Carlin, 724 8th St. N. E., will erect residence at U St. and Summit Pl. N. E.; cost \$5000.

D. C., Washington.—O. T. Wright, Bond Bldg., has plans by Hornblower & Marshall, 1410 H St. N. W., Washington, for dwelling at 13th St. and Iowa Ave.; two and a half stories; brick and stucco.

D. C., Washington.—Wendell & Trent, Philadelphia, Pa., has plans by D. Kneckerbocker Boyd, Philadelphia, Pa., for residence at Bradley Hills; colonial style; native stone construction.

D. C., Washington.—M. J. Keane, Colorado Bldg., plans to erect three three-story dwellings at 3027-29 31 15th St.; cost \$71,500.

D. C., Washington.—A. B. Emmons, 1811 N St. N. W., has plans by J. H. de Sibour, Hibbs Bldg., for residence at 24th and S Sts.; Georgia type; brick and stone; three stories; 20 rooms; cost \$70,000.

Fla., St. Augustine.—H. J. Usina will expend \$3000 to \$5000 to erect rooming house and stores recently noted. (See "Stores.")

Fla., Tampa.—W. S. Ferreira plans to erect dwelling; cost \$4000.

Ga., Atlanta.—A. E. Orr will erect two-story residence at 354 St. Charles Ave.; frame; cost \$5500.

Ga., Atlanta.—Clarence Blosser will erect dwelling on Myrtle Ave.; two stories; concrete block; cost \$8000.

Ga., Atlanta.—J. A. Renfro will erect four one-story frame dwellings at 49 and 55 W. 4th St., 53 N. Forsyth St. and 27 Prado St.; cost \$17,000.

Ga., Atlanta.—Julius Delsner will erect residence; one story; frame; cost \$4000.

Ga., Atlanta.—General Realty Development Corporation will erect three one-story frame residences on W. 5th St.; cost \$1500 each.

Ga., Atlanta.—R. H. Williamson will erect two-story frame residence at 107 Highland View Ave.; cost \$3500.

Ga., Atlanta.—Mrs. R. B. Myers will erect two two-story frame residences at 59 E. 11th St.; cost \$8800.

Ga., Atlanta.—Mrs. T. M. Nichols will erect two-story frame residence at 559 Ponce de Leon Ave.; cost \$5000.

Ga., Augusta.—Edward Sheehan, Jr., will erect residence on 11th St., Monte Sano; cost \$4700.

Ga., Augusta.—J. C. Fargo has plans by G. Lloyd Preacher, Augusta, for dwelling. (Recently noted.)

Ga., Augusta.—Charles F. Marks will erect residence at Monte Sano; cost \$6000.

Ga., Augusta.—Dr. W. W. Battey, Jr., has plans by G. Lloyd Preacher, Augusta, for dwelling.

Ga., Savannah.—City Investment Co. will erect 15 dwellings on 6th St., Rivers ward.

Ga., Savannah.—Frank Sloat has plans for dwelling and garage; former 33x33 feet; 16-foot porch; shingle; mill construction; hot-water heat; electric lighting; Monarch metal roofing; cost \$7000.

Ga., Savannah.—E. Seabrook will erect three-story brick residence in Gaston Ward.

Ky., Bowling Green.—Max B. Nahn has plans by D. Anderson Dickey, Nashville, Tenn., for dwelling; two stories; 50x60 feet; ordinary construction; cost \$12,000; hot-water heat; electric lighting; metal-slate roof; date of opening bids not set. (Recently noted.)

Ky., Lexington.—J. L. Dodge has plans by G. Lloyd Preacher, Augusta, for residence, servants' quarters, race-track, power-house, electric and water plant; cost \$30,000.

Ky., Louisville.—Ralph S. Towle will erect number of cottages.

Ky., Louisville.—Joseph Rees will erect brick veneer dwelling at 1215 Bardstown Rd.; cost \$4000.

La., New Orleans.—Phoenix Building and Loan Association will erect double two-story residence on Jena St.; cost \$4700.

La., New Orleans.—H. Goodman will erect single two-story dwelling on Palmyra St.

La., New Orleans.—Mrs. L. Calarro will erect double cottage on Sycamore St.; cost \$3000.

La., New Orleans.—The Crescent City Building and Loan Association will erect residence; frame; two stories; cost \$3000.

La., New Orleans.—George Briere will erect double two-story residence; cost \$5500.

La., New Orleans.—R. G. Holzer will erect frame residence; cost \$12,600.

La., New Orleans.—D. J. Geary will erect

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three double cottages on Cambroune St.; cost \$6000.
Md., Baltimore.—A. M. Easter, 22 E. Lexington St., purchased site at University Parkway and Wyman Ave. for client, who will erect residence to cost about \$40,000.
Md., Baltimore.—Charles A. Sadtler has plans by John R. Forsythe, 232 St. Paul St., Baltimore, for dwelling at Montgomery Rd. and Alto Ave.; bungalow type; one story and attic; 25x33 feet; slate roof; concrete foundation.
Md., Baltimore.—T. J. Hooper Realty Co., 311 American Bldg., will erect 600 dwellings between 13th, 15th, Lombard and Hudson Sts.; brick; six rooms and bath; cost \$1300 to \$1600 each; will erect 76 at present; reported to have awarded contract for 5,000,000 bricks to Burns & Russell Company, 1103 American Bldg., to be used in development; John T. Donohue, 1808 Thames St., Baltimore, manager of construction.
Md., Baltimore.—Walter Westphal, 1700 N. Bond St., will erect number of dwellings on Edmondson Ave. near Pulaski St.; two stories; 14x45 feet; hot-air heat; Carey's roofing; cost \$100,000; plans and construction by owner.
Md., Baltimore.—John T. Donohue, 1808 Thames St., has plans by M. R. Stone, 2238 E. Hoffman St., Baltimore, for 41 dwellings on Linwood Ave.; two stories; iron-spot brick construction; marble trimmings.
Md., Baltimore.—T. C. Corner, 200 W. Biddle St., has plans by Elliott & Emmart, Union Trust Bldg., Baltimore, for cottage on Merry Mountain Rd.; two and a half stories; contractors estimating are John Cowan, Inc., 106 W. Madison St.; Edward Piert, 15 E. Fayette St.; W. E. Harn Company, 213 N. Calvert St.; Gladfelter & Chambers, Parkdale and Maryland Aves.; G. Walter Towell, Eutaw and Dolphin Sts., all of Baltimore, and Roland Park Company, 408 Roland Ave., Roland Park, Md.
Md., Cumberland.—Geo. G. Young, Mayor, will erect colonial residence; architect not selected. (See "Machinery Wanted.")
Miss., Highlandale.—D. S. Jones has plans by William Drago, Hennen Bldg., New Orleans, La., for dwelling; cost \$15,000.
Miss., Schlater.—Edward Jones has plans by William Drago, Hennen Bldg., New Orleans, La., for dwelling; cost \$12,000.
Mo., Kansas City.—W. J. Rentjes will erect four dwellings at 2201-03-05-09 E. 38th St.; two of stone veneer and two of brick veneer; cost \$8000.
Mo., Kansas City.—J. E. Ginsinger will erect stone and stucco dwelling at 1845 Houston St.; cost \$3000.
Mo., Kansas City.—Pratt & Pratt will erect two stone-veneer dwellings at 119 Elmwood St. and 321 Lawn St.; cost \$3000 each.
Mo., Kansas City.—A. C. Black will erect brick-veneer dwelling at 134 Chelsea St.; cost \$3000.
Mo., Kansas City.—Cord Johnson will erect frame dwelling at 6 E. 57th St.; cost \$5000.
Mo., Kansas City.—Cowherd Bros. will erect brick-veneer dwelling at 60th and Main Sts.; cost \$6000.
Mo., Kansas City.—U. Perrine will erect stone veneer dwelling at 3306 Michigan Ave.; cost \$5000.
Mo., Kansas City.—Manheim Investment Co. will erect stucco dwelling at 1330 49th St.; cost \$3500.
Mo., Kansas City.—Matilda T. Davis will erect stucco dwelling at 5 E. 54th St.; cost \$500.
Mo., Kansas City.—Wells Bros. will erect five stucco dwellings on Montgall St.; cost \$300 each.
Mo., Kansas City.—Charles E. Patt will erect five stucco dwellings on E. 7th St.; cost \$1400 each.
Mo., Kansas City.—H. S. Crouse of Central Planing Mills Co. will erect several bungalows.
Mo., St. Louis.—G. Frank Thompson will erect two-story seven-room brick dwelling on Minerva Ave.
Mo., St. Louis.—Henry L. Thumber will erect six-room brick bungalow on Florissant Ave.
Mo., St. Louis.—Charles R. Thernaus will erect three four-room brick cottages on Jennings Station Rd.
Mo., St. Louis.—Frank Werner will erect cottage on Helen Ave.
Mo., St. Louis.—A. Bayer will erect addition to store and dwelling at 3125 Meramec Ave.; cost \$4000.
Mo., St. Louis.—C. P. Johnson will erect two-story dwelling at 5350 Bartmer St.; cost \$6000.

Mo., St. Louis.—Etrick Realty Co. has plans by A. Blair Riddington, 1102 Fullerton Bldg., St. Louis, for residence; 33x33 feet; ordinary construction; hot-water heat; red tile roof; cost \$7000; subcontracts will be let by architect. (Recently noted.)
Mo., St. Louis.—G. N. McCarthy will erect three-story dwelling at 3822 Lafayette St.; cost \$3000.
Mo., St. Louis.—Hulda E. Nagel will erect two-story dwelling at 4440 Ashland Ave.; cost \$1500.
Mo., St. Louis.—J. T. Garrett will erect two-story dwelling at 625 Westminster St.; cost \$16,000.
Mo., St. Louis.—Frank L. Dittmeier will erect 10 cottages at Ohio Ave. and Crittenden St.; one story; brick; five rooms; hot and cold water; cost \$33,000.
N. C., Carthage.—J. P. Sinclair will open bids immediately to erect dwelling; 11 rooms; pressed brick; mill construction; metal-shingle roof; cost \$10,000; plans by Frank B. Simpson, Raleigh, N. C.
N. C., Lumberton.—James D. Proctor will soon open bids to erect dwelling; 10 rooms; mill construction; hot-air heat; slate roof; cost \$5000.
N. C., Lumberton.—R. F. Sentelle will soon open bids to erect dwelling; nine rooms; mill construction; slate roof; cost \$3500; plans by Frank B. Simpson, Raleigh, N. C.
N. C., Raleigh.—J. J. Bernard will soon open bids to erect dwelling; 10 rooms; mill construction; hot-air heat; slate roof; cost \$5000; plans by Frank B. Simpson, Raleigh.
N. C., Rocky Mount.—J. S. Gorham has plans by John C. Stout, Rocky Mount, for dwelling; seven rooms; cost \$4000.
N. C., Rocky Mount.—George Ruck will open bids June 15 to erect proposed dwelling; 24x56 feet; ordinary construction; fireplaces; electric lighting; cost \$3500; plans by Harry R. Wagner, Rocky Mount.
N. C., Smithfield.—William R. Long has plans by John C. Stout, Rocky Mount, for dwelling; six rooms; cost \$5000.
N. C., Salisbury.—Leo C. Wallace will erect residence; cost \$12,000.
N. C., Salisbury.—R. Lee Wright will erect residence; pressed brick; cost \$12,500.
N. C., Wilmington.—W. L. Jones is having plans prepared by Koeth & Freidhof, Room 2 Masonic Temple, Wilmington, for \$4000 dwelling on Princess St.; ordinary press brick, veneer and shingles; hot-air heat; electric lighting; slate roof.
N. C., Wilmington.—T. E. Brown is having plans prepared by Koeth & Freidhof, Room 2, Masonic Temple, Wilmington, for two-story frame dwelling at Carolina Heights; ordinary construction; slate roof; electric lighting; cost \$3000.
N. C., Wilmington.—E. T. Hancock is having plans prepared by Koeth & Freidhof, Room 2 Masonic Temple, Wilmington, for \$3000 frame dwelling; slate roof; electric lighting.
N. C., Wilmington.—R. C. Platt is having plans prepared by Koeth & Freidhof, Room 2 Masonic Temple, Wilmington, for frame dwelling at Carolina Heights; ordinary construction; slate roof; hot-water heat; electric lighting; cost \$5000.
Okla., Oklahoma City.—J. S. Wylie has plans by Layton & Smith, Oklahoma City, for residence; two and a half stories; stone and shingles; cement steps; fluted Doric columns at front.
Okla., Oklahoma City.—Mann Development Co. will erect about 20 dwellings this year; brick, stone and frame; electric lighting; metal Spanish tile roof; cost \$2500 to \$6000; plans and construction by owner. (J. W. Mann recently noted to erect three dwellings.)
S. C., Charleston.—R. Maxwell Anderson will erect number of dwellings on Colonial St.
S. C., Winstboro.—Presbyterian Church manse (bids recently noted received until June 8) will be 40x50-foot structure; ordinary frame; metal shingles; cost about \$6000; plans by J. H. Sams, Columbia, S. C.; J. C. Caldwell, chairman building committee.
Tenn., Memphis.—H. J. Rettew will erect residence at 1834 Faxon Ave. to cost \$2000, and one at 1639 Monroe Ave. to cost \$2700.
Tenn., Memphis.—H. P. Hurt will erect residences at 169-71 Cox Ave.; cost \$2650 each.
Tenn., Memphis.—A. C. Floyd will erect residence at 1503 Harbert Ave.; cost \$5400.
Tenn., Memphis.—J. E. Hollingsworth will erect residences at 379 and 389 N. McNeill St. to cost \$2640 each, and at 328 N. McNeill St. to cost \$5500.
Tenn., Memphis.—F. C. Storey will erect residences at 1430 Carr Ave. and 1947 Cowden Ave.; cost \$4900 and \$2600, respectively.

Tenn., Memphis.—Gilbert Real Estate & Investment Co. will erect residence at 1761 Vin-ton Ave.; cost \$2500.
Tenn., Nashville.—Henry Sudekum will erect residence; brick construction.
Tenn., Nashville.—J. D. Pope will erect two-story bungalow at 823 Acklen Ave.; cost \$3000.
Tenn., Nashville.—Mrs. J. W. Jakes will erect brick-veneer residence at 12 Ordway Pl.; cost \$6000.
Tenn., Nashville.—W. S. Bransford will soon open bids to erect dwelling; two stories; ordinary construction; steam heat; concrete sidewalks; art-glass conservatory, with glass roof and tile floor and wainscotting; cost \$20,000; plans by Marr & Holman, Nashville; architects may be addressed. (Recently noted.)
Tenn., Nashville.—T. W. Hooper will erect brick residence on Seventeenth Ave. near Edgehill; cost \$3500.
Tenn., Wartrace.—George W. Williams, Jr., will soon open bids to erect residence; two stories; stucco; hot-water heat; cement sidewalks; Kidwood shingle or tile roof; cost \$7500; plans by Marr & Holman, Nashville, Tenn.; architects may be addressed. (Recently noted.)
Tex., El Paso.—Joe H. Goodman will erect two-story brick residence at El Paso and California Sts.; cost \$6000.
Tex., Houston.—O. A. Coons, it is reported, prepared plans and will superintend construction of number of California bungalows between Forest Hill Ave. and Country Club.
Tex., San Antonio.—R. M. Hughes will erect residence; 10 rooms; brick; cost \$13,000.
Tex., San Antonio.—C. E. and W. E. Malone will erect four-room cottage on North Flores St.; cost \$4000.
Tex., San Antonio.—W. A. Baily will erect two-story dwelling at 3851 Alamosa St.; cost \$3700.
Tex., San Antonio.—H. H. Branham will erect residence at 1816 Magnolia Ave.; eight rooms; cost \$3000.
Va., Coeburn.—Frank Gibson will erect residence.
Va., Richmond.—Henry Clark will erect dwelling at 1830 Monument Ave.; three stories and basement; brick; cost \$18,000.
W. Va., Charleston.—Ladies' Aid Society of First Methodist Church has plans by David Dick, Charleston, for parsonage.

GOVERNMENT AND STATE

D. C., Washington.—Isolation Hospital.—H. L. Pettus, Major and Quartermaster, will receive bids until June 17 to erect isolation hospital, kitchen addition to hospital proper and addition to nurses' quarters. Walter Reed General Hospital at Takoma Park, including plumbing, electric work, etc.
Okla., Pryor Creek.—Orphanage.—State Board of Affairs, Oklahoma City, Okla., will erect two or more cottages for orphans' home.
Tex., Austin.—Plans for Confederate Woman's Home have been prepared by C. H. Page & Bro., Box 213, Austin, Tex. (Recently noted.)
Va., Catawba Sanatorium.—Sanatorium.—State Board of Health, Richmond, will defer erection of receiving hospital at Salem, Va., and will increase facilities at sanatorium; erect infirmary building, install sewage-disposal and lighting plants, etc.
Va., Salem.—Hospital.—State Board of Health, Richmond, Va., will defer erection of receiving hospital recently noted. (See Va., Catawba Sanatorium.)
W. Va., Fairmont.—Postoffice.—Treasury Department, office of supervising architect, James Knox Taylor, Washington, D. C. Proposals received in this office until July 15 for construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring and interior lighting fixtures) of United States postoffice; one story and basement; about 7920 square feet ground area; brick-faced; stone trimmings; tin roof, drawings and specifications obtainable from custodian at site or at this office, at discretion of supervising architect. (Previously noted.)
Tenn., Chattanooga.—Public Building and Jail.—G. S. Bingham, depot quartermaster, Jefferson Ind., will receive bids until June 15 to construct and repair public buildings and stone enclosing wall at Chattanooga National Cemetery; information on application.

HOTELS

Ga., Rome.—J. L. Bass and J. A. Rounsaville plan to remodel Cherokee Hotel.
Ga., Rome.—Broad Street Hotel Co. organized by John M. Graham, E. P. Harvey, J. H. Lanham and others; will erect hotel.

Mo., Kansas City.—Trustees Realty Co. will erect hotel and business building at 17-19 W. 12th St.; concrete and steel; cost, exclusive of excavation, foundation and finishings, \$87,000.
Mo., Kansas City.—Carr estate will erect hotel at 430 Westport Ave. to replace present structure.
Mo., Kansas City.—Walter M. Davis will erect hotel; concrete; cost \$92,000.
N. C., Greensboro.—Gulfport Hotel will erect addition of 16 rooms to present building; also make other improvements; time and material plan; construction begun.
N. C., Fayetteville.—C. C. McAllister and M. N. Matthews will, it is reported, erect 100-room hotel to cost \$150,000 and ice plant in rear to have daily capacity of 40 tons.
S. C., Greenwood.—Oregon Hotel Co. is reported as contemplating erection of hotel; 75 rooms; cost \$29,000.
Tenn., Newport.—W. C. Terry of Knoxville, Tenn.; M. L. Reed, P. A. Susong and others are interested in erection of hotel; 25 rooms; three stories; cost \$10,000.
Va., Ocean View.—Charles H. Consolvo, Norfolk, Va., will, it is reported, erect hotel; three stories; brick and wood; colonial style; 360x40 feet; 175 rooms; bath for every other room; billiard rooms, sun parlor, etc.; cost \$200,000.

MISCELLANEOUS

D. C., Washington.—Car Shed.—Washington Railway & Electric Co., 14th and E. Capitol Sts., is receiving bids to erect car-storage shed at 4½ and O Sts. S. W.
Ky., Franklin.—Hospital.—Dr. W. A. Guthrie has plans by D. Anderson Dickey, Nashville, Tenn., for proposed hospital to cost \$18,000; three stories and basement; 37x32 feet; Burger system metal lumber; composition roofing; direct-indirect steam heat; electric lighting; Otis automatic elevator; date of opening bids not set.
La., New Orleans.—Armory.—Second Regiment Infantry Association incorporated with \$50,000 capital stock by Colonel Wheat, J. A. Blythe, A. G. Bourdet and others; will erect armory equipped for gymnasium, clubhouse, etc.; will contain auditorium, banquet hall, roof garden, etc.
Md., Baltimore.—Shed.—Maryland Steamboat Co., M. P. McDonagh, engineer, 305-306 Maryland Trust Bldg., will receive bids until June 7 to erect freight and passenger shed on Pier No. 5, Pratt St.
Md., Baltimore.—Home.—Exeter Women's Home has plans by Owens & Slaco, 1605 Continental Bldg., Baltimore, for alterations and improvements; will erect new building at 7 N. Exeter St. and remodel structure at 5 N. Exeter St.
Mo., Kansas City.—Bathhouse.—Abe Wineberg will erect bathhouse. (See "Stores.")
Mo., St. Louis.—Cafe.—Delmar Villa will rebuild structure reported burned; bungalow type; J. C. Jannopoulos, manager.
N. C., Burlington.—Hospital.—Drs. Spoon and Hornaday will erect veterinary hospital on Worth St.; two stories and basement; screen doors and windows.
S. C., Ware Shoals.—Amusement Hall.—Ware Shoals Manufacturing Co. has plans by J. E. Sirrine, Greenville, S. C., for amusement hall; three stories; brick; to contain gymnasium, shower baths, reading-rooms, library, auditorium, restrooms for ladies, etc.; bids submitted. (Recently noted.)
Tenn., Nashville.—Amphitheater.—Tennessee State Fair Association, J. W. Russwurm, secretary, will erect amphitheater in enclosure surrounding race track at fair grounds; will construct subways under race track to permit persons going into center of ellipse.
Tex., Dallas.—Fair.—State Fair managers will not award contract to construct cafe and restaurant building, but will employ laborers and mechanics to erect same under supervision of Mr. Watson; reinforced concrete; 500x44 feet; windows and doors steel and ribbed wire glass; gas ranges. (Previously noted.)
Tex., Greenville.—Sanitarium.—Dr. J. S. Hill will erect 32-room sanitarium.
Tex., Houston.—Shed, etc.—Merchants' Compress Co. will receive bids to erect cotton-classing shed, 105x630 feet; frame; galvanized-iron roofing; concrete floor; reinforced concrete fireproof 27x37 feet; concrete roof and floor; equipped with automatic fireproof fireproof cotton storage warehouse, divided into three apartments; reinforced concrete and hollow tile; concrete roof and floors; electric lights in conduit; fireproof doors, etc.; plans and specifications at office of G. W. Collignon, architect and engineer, 710-1112 Paul Bldg., Houston.
Tex., Houston.—Sanitarium.—Dr. James Greenwood, Jr., Galveston, Tex., will erect sanitarium near Bellair.

Tex., Houston.—Clubhouse.—Houston Turnverein will receive bids through Sanquett, Staats & Barnes, First National Bank Bldg., Houston, until June 12 to erect clubhouse; certified check for 5 per cent. amount of bid with general contract bids, and for same amount with bids for other portion of work, payable to W. W. Schmidt, president; plans and specifications at office of architects, First National Bank Bldg., Houston; First National Bank Bldg., Fort Worth, Tex.; Wilson Bldg., Dallas, Tex., and Frost Bldg., San Antonio, Tex. (Previously noted.)

Tex., Houston.—Home.—Faith Home has plans by Mauran & Russell, St. Louis, Mo., for home; three stories and small basement for heating equipment; laundry with special washing and drying apparatus; boys' and girls' dormitories each with capacity for 28 beds; toilet and bath rooms connected with each dormitory; separate wards for children and babies; accommodations for 143; sleeping gallery 125x12 feet; steam heat; electric lights; fire escapes; cost \$40,000.

Tex., Mercedes.—Hospital.—Board of trustees, E. C. Schoonmaker, chairman, will expend \$10,000 to erect first part of hospital; ordinary construction; brick; architect not selected. (Recently noted.)

RAILWAY STATIONS

Ala., Tuscaloosa.—Tuscaloosa Mineral Railroad, Woolsey Fennell, chief engineer; Mobile & Ohio Railroad, B. A. Wood, chief engineer, Mobile, Ala.; Alabama Great Southern Railroad, C. Dougherty, chief engineer, Cincinnati, O., and Illinois Central Railroad, A. S. Baldwin, chief engineer, Chicago, Ill., will, it is reported, erect union depot.

Ark., Helena.—St. Louis, Iron Mountain & Southern Railway Co., E. F. Mitchell, chief engineer, St. Louis, Mo., will erect 38x135-foot brick passenger station; part two stories, 31 feet 6 inches by 38 feet; balance one story; clay tile roof; cost, with necessary track changes, \$24,000; foundation to be built by company; contract for superstructure to be awarded soon. (Recently reported.)

Ga., Griffith.—Central of Georgia Railroad, C. K. Lawrence, chief engineer, Savannah, Ga., will erect depot.

La., Franklin.—Iberia, St. Mary & Eastern Railroad, I. W. Troxel, chief engineer, New Iberia, La., will, it is reported, erect depot.

Ky., Prospect.—Louisville Railway Co., Louisville, Ky., will erect freight and passenger depot.

La., New Orleans.—Texas & Pacific Railway, B. S. Wathen, chief engineer, Dallas, Tex., will, it is reported, erect passenger terminal to cost \$2,000,000. T. J. Freeman, vice-president, wires Manufacturers Record: "No plans as yet for terminal improvements."

Mo., Independence.—Missouri Pacific Railway Co., E. F. Mitchell, chief engineer, St. Louis, Mo., will soon let contract to erect new passenger station; 28x118 feet; one story; clay tile roof; will also remodel present station into freighthouse; cost (including track changes), \$13,000; foundation work done by company's force. (Recently noted.)

N. C., Ridgecrest.—(not a postoffice).—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., will erect freight and passenger station; 23 feet 8 inches by 72 feet; white and colored waiting-rooms and freightroom and office 14x15 feet, 7x14 feet, 19x22 feet 6 inches and 8x25 feet 4 inches, respectively; tin shingle roof; chert platform and landing.

Okl., Ada.—St. Louis & San Francisco Railroad Co., M. C. Byers, chief engineer of operation, Springfield, Mo., will erect depot; concrete construction; cost \$12,000; details not completed. (Recently noted.)

Okl., Cleveland.—Missouri, Kansas & Texas Railway, S. B. Fisher, chief engineer, St. Louis, Mo., will erect passenger depot; brick; cost \$20,000.

Tex., Fort Worth.—St. Louis Southwestern Railway Co. of Texas, C. D. Purdon, consulting engineer, St. Louis, Mo., will probably erect freight depot; one story; 40x200 feet; second story at one end for office; plans not complete.

SCHOOLS

Ala., Hartselle.—City will vote on \$15,000 bond issue to erect school; brick construction. Address The Mayor.

Ala., Mobile.—Mobile County Board of School Commissioners will have plans prepared by supervising architect L. H. McNeill, Mobile, for proposed high school to accommodate 1000 to 1200 students.

Ark., Conway.—Central College trustees inaugurated campaign for \$10,000 to erect additional wing on main building.

Ark., Trumann.—City will erect school; five rooms; brick. Address The Mayor.

Ark., Womble.—Board of Education, W. E. Womble, president, will rebuild State high school recently burned.

Ga., Cartersville.—City voted \$50,000 bond issue to improve East Side school, extend electric-light plant, gas and water-works. Address The Mayor. (Previously noted.)

Ky., Louisville.—J. J. Cornelson, president, will receive bids to erect school in Jacob Addition; plans and specifications at office of Val P. Collins, architect, 624 Paul Jones Bldg., Louisville.

Ky., Marion.—City will let contract in June to repair school building; T. H. Cochran, Mayor. (Bond issue of \$3000 recently noted.)

Ky., Harlan.—City will vote June 15 on \$10,000 bond issue to erect high school. Address The Mayor.

Ky., Russellville.—Logan College, Dr. Browder, manager, will erect \$10,000 annex; plans by D. Andrew Dickey, Nashville, Tenn.; three stories; 40x100 feet; tin roof; low-pressure steam heat; electric lighting; date of letting contract not set.

La., Leesville.—Vernon Parish School Board will receive bids addressed to W. L. Ford, superintendent, until June 18 to erect school according to plans by Stevens & Nelson, 1109 Hennen Bldg., New Orleans, La., and from whom plans and specifications may be obtained; certified check for \$1000.

La., New Orleans.—City is reported as considering erection of annex to Crossman school; cost \$55,000; Charles R. Kennedy, City Comptroller.

Md., Myersville.—Blue Ridge College, W. M. Wine, president, Union Bridge, Md., will remove to Myersville, erect temporary buildings at present and \$100,000 permanent administration building later.

Md., East New Market.—W. E. Johnson, S. J. T. Smith, secretary, J. A. Baker and others, building committee, will receive bids through school treasurer of Dorchester county, Cambridge, Md., until June 18 to erect high school, including heating equipment; completion by November 1; plans and specifications at office of School Board, Cambridge, Md.

Miss., University.—Andrew A. Kinnannon, chancellor, states plans have not been selected for Peabody building for University of Mississippi, recently noted to cost \$40,000; other improvements include repairs to heat and light plant at cost of \$3000, also to astronomical observatory and other buildings; install special equipment in department of civil engineering for course in road building, etc.

Mo., Carthage.—City will vote June 18 on \$10,000 bond issue to erect \$4500 school to replace Kendricktown School and make other improvements. Address School Board.

Mo., Kansas City.—City voted \$2,000,000 bond issue to erect two high schools, 12 graded schools, addition to main library building and two branch libraries; Frank A. Faxon, president of School Board. (Recently noted.)

N. C., Concord.—Mt. Amoena Seminary, J. H. C. Fisher, chairman building committee, has plans by Sayre & Baldwin, 405 Bleckley Bldg., Anderson, S. C., for dormitory building.

N. C., Dunn.—Board of Education, T. C. Young, secretary, will erect addition to building; bids invited. (See "Machinery Wanted.")

N. C., Teachers.—P. E. Shaw may be addressed relative to erecting school; cost \$6000. (Recently noted.)

N. C., Washington.—Board of Education of Northern Methodist Church selected Washington as location for proposed college; C. A. Finn, secretary of Chamber of Commerce, can probably furnish information.

Okl., Oklahoma City.—Trustees of Musical Institute of Oklahoma will receive bids until June 8 to erect three-story building; plans and specifications at office of Van Slyke & Woodruff, architects, Oklahoma Bldg., Oklahoma City.

Okl., Oklahoma City.—Oklahoma Wesleyan College, W. A. Shelton, president, plans to complete administration building; partially erected at cost of \$40,000; cost of completed structure, \$125,000.

S. C., Batesburg.—South Carolina Lutheran Synod selected site at Batesburg for proposed Lutheran College; Rev. C. P. Boozer, Saluda, S. C.; Rev. S. C. Ballentine, Leesville, S. C., and others, trustees.

S. C., Columbia.—School Commissioners are having plans prepared by Wilson & Sompayrac, Columbia, for school on Elmwood Ave.; F. C. Withers and W. F. Stieglitz, building committee.

S. C., Dillon.—City will erect proposed school; cost \$25,000 to \$30,000. Address The Mayor.

S. C., Keowee.—School trustees of Oconee county, J. F. Hunslett, E. H. Lanford and J. L. Kell, will receive bids until June 10 to erect school in Wolf Stake and High Falls Section; plans and specifications at office of Superintendent of Education of Oconee county.

S. C., Spartanburg.—Textile Industrial Institute will erect dormitory; cost \$25,000; C. P. Hammond, chairman of trustees.

S. C., Walhalla.—Walhalla School District has plans by Sayre & Baldwin, 405 Bleckley Bldg., Anderson, S. C., for addition to school building. (Recently noted.)

Tenn., East Chattanooga.—Hamilton County School Commissioners, Chattanooga, Tenn., are having plans prepared by R. H. Hunt, Chattanooga, Tenn., for school; eight rooms, office, cloakrooms, etc.; cost \$16,000. (Recently noted.)

Tenn., Knoxville.—Knox county has plans by L. C. Waters, Knoxville, for six-room school building; ordinary construction; shingle roof; cost \$8000. (Recently noted.)

Tenn., Lebanon.—Castle Heights College trustees will erect library building to cost \$7500 to \$8000; convert old chapel into dormitory, enlarge dining-room, kitchen and store-rooms.

Tenn., Westport.—Carroll County School Board, Huntingdon, Tenn., will erect school; also rebuild Wilder school recently burned.

Tex., Austin.—School Board contemplates expenditure of either \$70,000 to remodel and enlarge present high school or \$15,000 to repair this structure and \$75,000 to erect new building; also considering erection of Central High School for negroes.

Tex., Austin.—W. B. Anthony, president board of trustees, 811 Littlefield Bldg., will receive bids until June 10 to repair dormitory and dining hall at State Institute for Colored Deaf, Dumb and Blind; certified check for \$100; plans at office of W. E. Ketchum, Room 5 First National Bank Bldg., Austin.

Tex., Hillsboro.—City voted \$40,000 bond issue to erect grammar school. Address The Mayor. (Previously noted.)

Tex., Houston.—City has plans by C. H. Page & Bro., Box 213, Austin, Tex., for school building to cost about \$60,000; heating and lighting.

Tex., Houston.—City accepted plans by Sanguinetti, Staats & Barnes, Houston, for proposed First Ward School; 108 feet x 6 inches by 73 feet 6 inches; pressed brick and cut stone; copper cornices; main entrance of stone, brick and tile; manual training and domestic science departments in basement.

Tex., Jourdanton.—R. L. Witt will receive bids until June 15 to erect school; certified check for \$500; plans and specifications at office of C. H. Page & Bro., architects, Austin, Tex.; estimated cost, \$15,000.

Tex., Odell.—School District No. 37, W. M. Scott, secretary, will expend \$7000 to erect school building; two stories; 57x74 feet; m/p construction; tar and gravel roof; plans by J. C. Chisum, Altus, Okla. (Recently noted to receive bids until May 28.)

Tex., Odem.—City voted bond issue to erect \$15,000 school. Address The Mayor.

Tex., Sinton.—Sinton school district No. 1 voted \$44,000 bond issue to purchase site and erect school. Address District School Trustees. (Previously mentioned.)

Tex., Stamford.—City will vote on \$25,000 bond issue, portion of which will be used to erect ward school and eight additional rooms to high school. Address The Mayor.

Tex., Taylor.—Buildings and grounds committee, J. W. Womack, James A. Thompson and others, adopted plans by Endress & Walsh, Austin, Tex., for proposed school to cost complete \$22,000; plan is to only complete first story and basement, construct exterior of second floor, etc.; initial cost \$16,000.

Va., Barton Heights.—(not a postoffice).—School Board of Brookland District, Henrico county, will receive bids until June 8 to erect addition to Barton Heights School; certified check for \$450, payable to chairman of School Board, Brookland District, Henrico county; plans and specifications at office of Albert F. Hunt, architect, 1107 E. Main St., Richmond, Va., to whom bids should be addressed.

Va., Radford.—Bids received until June 28 to erect administration building, State Normal and Industrial School for Women; bids delivered to W. T. Baldwin, chairman of board, East Radford, Va., where plans and specifications may be seen and furnished to contractors in order applied for upon deposit of \$10 or upon application to Charles M. Robinson, architect, 2901 Grove Ave., Richmond, Va.; certified check for \$500; certified check for \$100 each to accompany

plumbing and heating and \$50 to accompany electric wiring bids. (Previously noted.)

Va., Boulder.—(not a postoffice).—J. R. Holland, chairman of Holy Neck District School Board, Holland, Va., will receive bids until June 15 to erect two-story brick school at Boulder, Nansemond county, about 3½ miles from Lumis, Va., on Southern Railway; plans and specifications at office of Lee Britt, Suffolk, Va.

Va., Dayton.—Shenandoah Collegiate Institute trustees plan to erect Young Men's Christian Association building; three stories; cost \$15,000.

Va., Norfolk Highlands.—(not a postoffice).—Washington District School Board, A. R. Foreman, division superintendent, Norfolk, Va., opened bids to erect school; bids deemed excessive and plans by Lee & Diehl, Norfolk, Va., ordered revised. (Recently noted.)

W. Va., Keyser.—Board of Education of Keyser School District will receive bids addressed to L. B. McCool, secretary, until June 15 to improve old school building and for fire escapes for new structure; certified check for \$100, payable to W. S. Davis, president; voted \$15,000 bond issue.

STORES

Ark., Cabot.—Jesse Hamilton will erect two brick business buildings.

Ark., Cabot.—W. T. Botts will erect business building; brick construction.

Ark., Cabot.—Jack Barnwell will erect business building; brick.

Ark., Cabot.—Thompson & Adams will erect brick business building.

Ark., Little Rock.—John Skinner will erect two-story building at 21st and Wolfe Sts.; cost \$3500.

D. C., Washington.—Harry Wardman, 120 New York Ave., will erect three-story building with frontage of 24 feet at 723 7th St. to cost \$28,000; three-story store and office building at 729 11th St. N. W., and 10 two-story store buildings opposite K St. and Vermont Ave.

D. C., Washington.—E. C. Brainerd, 1516 H St. N. W., has plans by A. P. Clark, Jr., 1516 14th St., for business building at 125 Connecticut Ave.; four stories; 26x80 feet; fireproof; front faced with glazed terracotta.

Fla., Jacksonville.—W. A. Evans, P. T. Kontos and J. W. Davidson will, it is reported, erect office and store building; five stories.

Fla., Jacksonville.—Mrs. Ella F. White will erect two-story frame brick veneer building on the Boulevard between 7th and 8th Sts.

Fla., St. Petersburg.—Ed T. Lewis is having plans prepared by Edgar Fernndon for store and apartment building at 3d St. and First Ave. North; four stories on first floor, 25x75 feet; brick; cost \$20,000.

Fla., St. Augustine.—H. J. Usina will expend \$3000 to \$5000 to erect two stores and rooming-house above; 45x60 feet; fireproof construction; gas heat; electric lighting; tile roof; plans not ready. (Recently noted.)

Fla., Palmetto.—J. A. Lamb, R. F. Willis and T. A. Howze will erect business buildings, each 45x65 feet, and connected with stairways; two stories; brick.

Fla., Tampa.—D. C. Walker will erect two-story brick building; 40x68 feet; cost \$10,000.

Ga., Augusta.—Mrs. R. Steinberg has plans by G. Lloyd Preacher, Augusta, for store building.

Ga., Milledgeville.—D. S. Sanford will expend \$8000 to erect store and office building recently noted; 60x105 feet; two stories; four stores on first floor; offices above; ordinary construction; brick and wood; plate-glass front; tin roof; construction by owner. (See "Machinery Wanted.")

Ga., Savannah.—M. K. Jones Company will erect store building; three stories; brick; cost \$10,000.

Ga., Savannah.—Isaac Silver & Bro. has plans by G. Lloyd Preacher, Augusta, Ga., for store.

Ky., Lebanon Junction.—A. Davis will rebuild clothing store recently noted burned; brick or concrete structure.

Ky., Lebanon Junction.—Heft Bros. will rebuild structure recently burned; brick or concrete construction.

Ky., Lebanon Junction.—R. T. Mudd will rebuild jewelry store recently noted burned; brick or concrete construction.

Ky., Lebanon Junction.—J. E. Johnston will rebuild drug store recently noted burned; brick or concrete construction.

Ky., Louisville.—George Keller will erect frame store at 2132 Date St.; cost \$3000.

Ky., Louisville.—Fidelity & Columbia Realty

Co. will erect number of two-story business buildings on Walnut St. between 5th and Center Sts.

La., New Orleans.—A. Crabites will alter and repair building on Rampart St. between Canal and Iberville Sts.; cost \$3614.

La., New Orleans.—A. Mazra will erect building in square bounded by St. Louis, Bourbon, Dauphine and Toulouse Sts.; two stories; brick; cost \$4800.

Mo., Kansas City.—Abe Wineberg will erect brick bathhouse at 574 Charlotte St. and brick business building at 718-22½ Independence St.; cost \$13,500.

Mo., Kansas City.—J. W. Coleman will erect brick store and apartment building; cost \$8500.

Mo., Kansas City.—Breyfogle Bros. will erect store and theater building at 3836-38 Troost Ave.; one and two stories; brick and stone; cost \$20,000.

Mo., St. Louis.—James M. Carpenter Real Estate Co. has plans by Albert B. Groves, St. Louis, for building at 312-14 N. 6th St.; six stories.

Mo., St. Louis.—M. N. Koehler will erect store at 6206-8 Delmar St.; one story; cost \$500.

Mo., St. Louis.—A. Bayer will erect addition to store and dwelling. (See "Dwellings.")

N. C., Henderson.—George Adams will erect two-story brick building.

N. C., Henderson.—Alexander Cooper is preparing to erect two three-story brick stores.

N. C., Rocky Mount.—Orlando Blunt has plans by Harry R. Wagner, Rocky Mount, for store; 50x100 feet; ordinary construction; electric lighting; hand-power elevator; tin roof; cost \$6000; day labor.

Okla., Oklahoma City.—J. Leroy Saddle will erect business building.

Okla., Oklahoma City.—W. F. Harn plans to erect business building at 3d St. and Harvey Ave.; five stories; foundation to support five additional stories.

Okla., Oklahoma City.—Rev. Mr. Knickerbocker will erect business building on 3d St., between Robinson St. and Broadway; three stories; brick and stone; foundation to support additional stories.

S. C., Charleston.—Frank Read will erect two stores and apartment building. (See "Apartment-houses.")

Tenn., Memphis.—E. L. Boyle will erect business building at Main St. and Butler Ave.

Tenn., Nashville.—Charles Mitchell will soon open bids to remodel store as bakery and confectionery store; ordinary construction; hot-air heat; concrete sidewalks; electric elevator; cost \$6000; plans by Marr & Holman, Nashville; architects may be addressed. (Recently noted.)

Tex., Dallas.—S. P. Rice will erect apartment-house and store. (See "Apartment-houses.")

Tex., Houston.—Stowers Furniture Co. will erect store building; fireproof. Company wires Manufacturers Record: "Building on corner 105x116 feet; ten stories and basement; reinforced concrete; equipped with sprinkler system; cost approximately \$125,000; understood Carl Suter, San Antonio, Tex., will be architect; passenger and freight elevators; exterior white glazed brick; stone trimmings." Solid plate-glass elevators.

Tex., Houston.—Jesse H. Jones will erect store building to be occupied by F. W. Woolworth Company of New York; 50x150 feet; six stories; fireproof.

Tex., Plainview.—T. A. Johnson of Paris, Tex., will, it is reported, erect brick business building.

Tex., San Antonio.—Alex. Joske will erect addition to store building on Commerce St.; cost \$25,000.

Tex., Victoria.—John J. Welder accepted plans by C. H. Page & Bro., Austin, Tex., and Hull & Praeger, Victoria, for building; five stories. (Recently noted.)

Va., Danville.—H. T. Pearson has prepared plans and will erect store building; two stories; 60x55 feet; press brick front and sides; three stories; cost \$8000.

W. Va., Princeton.—A. F. Wysong, architect, Princeton, will receive bids until June 12 to erect three-story brick store and office building at 9th and Mercer Sts.

THEATERS

Fla., West Palm Beach.—Carl Kettler will erect moving-picture theater to replace present structure; seating capacity 700.

Ky., Lexington.—Bids received by Berryman

Realty Co., C. H. Berryman, president, until June 5 to erect theater; certified check for 2 per cent. amount of bid; plans and specifications by W. H. McElfatrick, 701 Seventh Ave., New York, on file at Elmdorf Milk Depot, 118 N. Limestone St., Lexington. (Previously noted.)

Mo., Kansas City.—Breyfogle Bros. will erect store and theater building. (See "Stores.")

N. C., Elizabeth City.—Hinton Bros. will erect opera-house for Nutt & Kramer; 50x100 feet; stage 25x28 feet.

S. C., Greenville.—W. T. Henderson, T. F. Hunt, C. O. Hobbs and others will erect proposed Arcade Bldg on N. Main St.; to be occupied by Greenville Amusement Co.

Tenn., Memphis.—M. Frank will erect moving-picture theater.

Tex., McGregor.—Smith & Morehead will expend \$5000 to erect opera-house; 50x100 feet; ordinary construction; galvanized-iron roof; day labor. (Contract recently noted awarded.)

WAREHOUSES

Ala., Prattville.—Prattville Cotton Mills awarded contract to Algernon Blair, Montgomery, Ala., to erect cotton warehouse; three compartments, each 50x100 feet; concrete floors.

Ga., Brunswick.—Atlanta, Birmingham & Atlantic Railroad, Alex. Bonnyman, general manager, Atlanta, Ga., will, it is reported, erect warehouses.

Ga., Jackson.—Mallet & Nutt will erect warehouse; fireproof.

Ga., Moultrie.—Atlanta, Birmingham & Atlantic Railway, Alexander Bonnyman,

general manager, Atlanta, Ga., is reported as to have purchased one and a half acres of land and to erect number of warehouses.

Ky., Lexington.—Burley Tobacco Society will, it is reported, erect warehouses at Orchard Park.

Ky., Maysville.—Farmers & Shippers' Warehouse Co. of Cincinnati, O., will erect loose-leaf tobacco warehouse.

Ky., Louisville.—Jordan Owen's Tobacco Warehouse Co. incorporated with \$50,000 capital stock by Jordan Owen, J. L. Mansfield and R. Downs.

Md., Baltimore.—J. Goldstein, 344 Equitable Bldg., is having plans prepared by E. Rose for warehouse at 32-34 S. Frederick St.; four stories; mill construction.

Mo., St. Louis.—General Paper Stock Co. will erect warehouse at 7th and Carr Sts.

Mo., St. Louis.—American Manufacturing Co. will erect warehouse; one story, 40 feet high; 75x150 feet.

N. C., Raleigh.—North Carolina Cotton Oil Co. will erect warehouse and office building 100x50 feet and 40x60 feet, respectively; brick construction.

S. C., Columbia.—International Harvester Co. of America, Chicago, Ill., does not contemplate erecting buildings, as recently reported.

Tex., Brownwood.—Waples-Platter Grocery Co. will erect warehouse.

Tex., Corpus Christi.—Desel-Boettcher Wholesale Grocery Co. will erect warehouse and office building. (See "Bank and Office.")

Tex., Houston.—Merchants' Compress Co. will receive bids to erect warehouse, etc. (See "Miscellaneous Structures.")

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ala., Birmingham.—J. A. Brice awarded contract to A. M. Thorpe, Birmingham, to erect apartment-house; 50x100 feet; ordinary construction; tar and gravel roof; cost \$9500. (Recently noted under "Stores.")

Mo., Kansas City.—M. P. Connor awarded contract to E. H. Kampschmidt, Kansas City, to erect apartment-house at 2422-24-26 Harrison St.; three stories; brick and stone; cost \$30,000.

Tex., El Paso.—William Rosing awarded contract to J. W. Jackson, El Paso, to erect store and apartment building at Roosevelt, Putnam Sts. and Mundy Ave.; lower floor for store; upper floor for eight two-room apartments; El Paso brick; cost \$15,000; plans by Trost & Trost, El Paso.

Tex., San Antonio.—H. R. Stein awarded contract to George A. Moody, San Antonio, Tex., to erect apartment-house on Navarro St.; brick and steel frame; all partitions to have steel studs; metal lath and plastered walls and ceilings; joists to rest on I-beams supported by steel I-beam columns; 40 rooms; front porch and balcony for each apartment; steam heat; construction to permit erection of two additional stories; cost \$24,000; plans by E. D. Schneider, San Antonio.

ASSOCIATION AND FRATERNAL

Ga., Thomasville.—Young Men's Christian Association awarded contract to J. L. Grilben Company, Thomasville, to remodel building.

Mo., Mexico.—Benevolent Protective Order of Elks awarded contract to Simon Felty Construction Co., Columbia, Mo., to erect lodge building; cost \$19,400. (Recently noted.)

BANK AND OFFICE

Ark., Little Rock.—Rogers & Kahn (Bank of Commerce) will expend \$50,000 to erect bank and office building; 55x140 feet; steam heat; prism sidewalks; composition and copper roofing; plans by George R. Mann, Little Rock; contract recently noted awarded to Oklahoma City Construction Co., Little Rock; materials purchased. (Recently noted.)

Ga., Dublin.—First National Bank awarded contract at \$74,055 to J. O. Apperson, Atlanta, to erect bank and office building; seven stories; brick and terra-cotta; awarded contract for vault work to Victor Safe & Lock Co., Cincinnati, O., at \$3034; plans by A. Ten Eyck Brown, Forsyth Bldg., Atlanta, Ga. (Previously noted.)

Md., Baltimore.—Title Guarantee & Trust Co., Calvert Bldg., awarded contract to Wells Brothers Company, 805 15th St., Washington, D. C., to erect office building at Lexington St. and Courthouse Plaza; seven stories; ornamental brick and terra-cotta; cost about \$300,000. (Recently noted.)

S. C., Barnwell.—Bank of Western Carolina (Barnwell branch) will remodel bank building; will make roof steep and cover with terra-cotta tile with mansard effect; stucco exterior; additional vault; contract awarded to McGhee Bros., Aiken, S. C.; plans by Shand & La Faye, Columbia, S. C.; contract let for new fixtures.

Tex., Alvin.—G. Z. Sedwick awarded contract to erect two-story brick bank and store building.

Tex., Corpus Christi.—San Antonio (Tex.) Machine & Supply Co. awarded contract to erect warehouse and office building. (See "Warehouses.")

Tex., El Campo.—W. W. Dusen awarded contract to Zuber & Hill to erect two-story brick store and office building; 90x100 feet; plans by George Allison.

Tex., Ennis.—Mrs. Alexander awarded contract to Hix McCannless, Ennis, to erect store and office building. (See "Stores.")

Tex., Marshall.—Wells-Fargo & Co. Express, 51 Broadway, New York, awarded contract to A. J. Olsen, Cisco, Tex., to erect proposed building.

W. Va., Charleston.—J. B. Crowley awarded contract to erect office and theater building. (See "Theaters.")

CHURCHES

Ga., Atlanta.—Rev. I. Lissner, 95 N. Boulevard, has plans by and awarded contract to Mackie-Crawford Construction Co., 221 Grant Bldg., Atlanta, for church and school; 72x52 feet; fireproof construction; steam heat; electric lighting; slate roof; cost \$10,000; African Mission Society recently noted to erect building. (See "Machinery Wanted.")

Md., Govans.—Church of Blessed Sacrament awarded contract to D. M. Andrew Company, Equitable Bldg., Baltimore, Md., to erect edifice at Old York Rd. and Spring Hill Ter.; will erect basement first at cost of \$18,000; total cost of completed structure \$65,000; plans by Baldwin & Pennington, Professional Bldg., Baltimore, Md. (Recently noted.)

Mo., St. Louis.—Centenary Methodist Church awarded contract to M. Eysell Construction Co., St. Louis, to erect proposed additions to edifice at 16th and Pine Sts.; one 90 feet long and divided into three departments, other (separated by granite paved yard 20 feet square) for kitchen; will also remodel present structure; plans by F. C. Bonsack, St. Louis. (Previously noted.)

N. C., Charlotte.—East Avenue Tabernacle Associate Reformed Presbyterian Church awarded contract to S. L. Vaughan, Charlotte, to erect edifice and parsonage; cost \$30,000; former 78x98 feet; ordinary construction; brick; hot-air heat; electric lights. (Previously noted.)

N. C., Greensboro.—Forest Avenue Baptist

Church, J. W. Bloxton, chairman of building committee, awarded contract to S. E. Hanner, Greensboro to enlarge edifice; will rearrange interior to increase seating capacity 100; erect two-story addition in rear with four classrooms on each floor; cost \$3000.

N. C., Winston-Salem.—West End Methodist Church awarded contract to Thomas A. Butner, 114 Broad St., Winston-Salem, to erect proposed edifice after plans by Wheeler & Stern, Charlotte, N. C.; 81 feet 10 inches by 126 feet 10 inches; ordinary construction; cost \$16,000; low-pressure steam heat; gas and electric lighting; slate, tin and copper roofing; face walls; stone foundation; impervious brick; stone window trim, etc.

Va., Portsmouth.—First Congregational Church awarded contract to F. B. Wilkins, Portsmouth, to erect addition to edifice; brick and stucco; 34x55 feet; cost \$3450.

W. Va., Huntington.—First Methodist Church, Rev. A. J. Hiatt, pastor, awarded contract to R. H. Elker, Connellsville, Pa., to erect edifice; English-Gothic style; twin towers; auditorium with seating capacity of 1700; art-glass windows; gymnasium, kitchen, etc., in basement; cost, including pipe organ and furnishings, \$75,000; plans by J. C. Fulton, Uniontown, Pa. (Previously noted.)

CITY AND COUNTY

Tex., Corpus Christi.—City Hall.—City awarded contract at \$10,801 to erect city hall and fire station; will also expend \$10,000 to improve second and third floors of present structure. Address The Mayor.

COURTHOUSES

Ala., Cullman.—Cullman County Commissioners awarded contract at \$51,000 to F. M. Dobson, Jasper, Ala., to erect courthouse. (Recently noted.)

Okla., Pawhuska.—Osage county awarded contract to Donathan & Moore, Wilburton, Okla., to erect courthouse and jail; fireproof structure; 72x94 feet; cost \$93,000; direct steam heat; electric and gas lighting; tar and gravel roofing; plans by C. E. Hair & Co., Oklahoma City, Okla. (Recently noted.)

DWELLINGS

D. C., Washington.—G. P. Bleckford, Takoma Park, Washington, has contract to erect dwelling at Takoma Park; two stories and cellar and attic; 32x34 feet; brick; frame and pebble dash; slate roof; owner's name withheld.

D. C., Washington.—Mrs. Katherine McCormick, Chicago, Ill., will expend \$103,000 to erect dwelling; 90x52 feet; fireproof construction; hot-air heat; electric lighting; plans by John Russell Hope, New York; contract recently noted awarded to W. P. Lipscomb & Co., 145 F St. N. W., Washington.

D. C., Washington.—R. J. Earnshaw, 119 1st St. N. W., awarded contract to S. H. Maddox & Co., Bond Bldg., Washington, to erect nine two-story brick residences at 212-14 S St. S. E. and seven on 3d St., near S St. S. E.; cost \$14,000.

Ga., Augusta.—Dr. Walter C. Miller awarded contract to C. B. Holley, Augusta, to erect addition to residence; ordinary construction; hot-water heat; electric lighting; tin roof; cost \$6000; plans by G. Lloyd Preacher, Augusta. (Recently noted.)

Ga., Savannah.—J. P. Wheelan awarded contract to erect residence in Chatham Crescent; cost \$10,000.

Md., Baltimore.—Peter J. Miller, 1819 Wilkens Ave., awarded contract to C. C. Rumpf & Son to erect two-story residence on Boardman Ave. near Lewin St.; ornamental frame; slate roof; porches; concrete foundations; hot-air heat; electric lights; plans by Burton Reese.

Md., Baltimore.—Newbold & Sons, Inc., 443 Calvert Bldg., awarded contract to Israel Zimmermann, 1503 Alsquith St., Baltimore, to erect five dwellings 14x45 feet on Carswell St. near Polk St.; also ten on 29½ St.; two stories; brick; cost \$30,000; plans by Henry J. Tinley, 312 N. Charles St., Baltimore.

Mo., Clayton.—Christ Ruchl awarded contract to L. M. Robbins to erect frame bungalow and concrete garage; 22x50 feet; cost \$3500.

Mo., St. Louis.—William Bradford, Maplewood, Mo., awarded contract to P. Tully Building Co., 625 Easton St., St. Louis, to erect five-room brick bungalow at Richmond Heights; 25x46 feet; cost \$23,000.

Mo., St. Louis.—Duncan I. Meler, 913 Pine St., will expend \$18,000 to erect residence; 55x42 feet; two stories and attic; hot-water heat; black slate roof; plans by Guy C. Mariner, Chemical Bldg., St. Louis; contract recently noted awarded to Merrill Construc-

tion Co., 514 Century Bldg., St. Louis; all subcontracts let or decided upon.

Mo., St. Louis.—Dover Place Realty & Investment Co. awarded contract to William Degenhardt, St. Louis, to erect residence; mill construction; hot-water heat; gas and electric lighting; granite sidewalks; slate roof; cost \$3950; plans by Gerhard Becker, St. Louis. (Recently noted to erect two dwellings on Dover Place.)

N. C., Charlotte.—East Avenue Tabernacle Associate Reformed Presbyterian Church awarded contract to S. L. Vaughan, Charlotte, to erect parsonage. (See "Churches.")

N. C., Winston-Salem.—Mrs. Sallie Shelton awarded contract to Paul Miller to erect proposed dwelling; two stories; nine rooms; frame; electric lighting; cost \$3000.

Okl., Oklahoma City.—H. N. Schofield awarded contract to Stewart & Wilderson, Oklahoma City, to erect residence on 38th St.; two stories; cost \$1500.

Tenn., Memphis.—C. L. Hunt will erect residence at 990-92 Poland St.; cost \$3400; awarded contract to Deaderick & Wostenholm, Memphis.

Tenn., Memphis.—Mallory & Sons & Gilbert awarded contract to W. R. Gilbert, Memphis, to erect residences at 324-29 Buena Vista Pl.; cost \$6400 each.

Tenn., Memphis.—J. E. McCauplin awarded contract to F. E. Meacham, Memphis, to erect residence at 44 S. Barkdale St.; cost \$6900.

Tenn., Memphis.—M. G. and G. B. Schwartz awarded contract to erect residence on Tucker St.; cost \$5300.

Tenn., Memphis.—B. M. Shepard awarded contract to G. C. Hall, Memphis, to erect residence at 1800 Galloway Ave.; cost \$3650.

Tenn., Nashville.—James Culbert awarded contract to James L. Howell & Sons to erect dwelling; two stories; nine rooms; brick; ordinary construction; metal roof; cost \$5000; plans by W. E. Eason, Nashville. (Recently noted.)

Tex., Abilene.—H. S. Phillips, superintendent of Abilene & Southern Railway Co., awarded contract to G. C. McCauley, Abilene, to erect six-room bungalow in Alta Vista; rock foundation and columns.

Tex., Cherokee.—Alec Gray awarded contract to erect residence.

Tex., Cherokee.—Hugh Barber awarded contract to erect residence; two stories.

Tex., El Paso.—E. P. May awarded contract to Perry-Kirkpatrick Realty Co., El Paso, to erect bungalow; six rooms; California style; greendale rug brick; cost \$5300.

Tex., El Paso.—Frank C. Herr has plans by and awarded contract to Perry-Kirkpatrick Realty Co., El Paso, to erect bungalow at 1731 Fort Boulevard; eight rooms; California style; foundation piers, chimneys and trimmings of purple satin brick; remainder of structure of rough sawed rustic lumber and shingles; electric vacuum cleaner; hardwood floors; beamed ceiling; cost \$7000.

Tex., Houston.—Mrs. L. Ballinger awarded contract to Russell-Brown Construction Co., Houston, to erect two-story residence at Avondale and Ariel Sts.

Tex., Huntsville.—Mrs. M. Mitchell awarded contract to erect 16-room dwelling.

Va., Charlottesville.—M. Rubin & Son awarded contract to erect dwellings and stores. (See "Stores.")

Va., Charlottesville.—Dr. Stephen H. Watts awarded contract to King Lumber Co., Charlottesville, to erect proposed residence; 65x83 feet; two stories and basement; ordinary construction; hot-water heat; gas and electric lighting; cement sidewalks; white cedar roofing; cost \$20,000; plans by Ferguson, Calver & Taylor, Norfolk, Va.

Va., Lynchburg.—J. E. and F. J. Hall will erect residence; frame; shingle roof; 30x42 feet; two stories; ordinary construction; cost \$3800; vapor heat; electric lighting; plans by Heard & Cardwell; contract awarded to Mr. Barger.

Va., Richmond.—William T. Clark, 516 N. 32d St., has plans by and awarded contract to J. H. Moran, 302 N. 35th St., Richmond, to erect four semi-detached dwellings; 36x55 feet; 25 feet high; ordinary construction; brick; ranges and latrines; gas and electric lighting; tin roof; cost \$10,425. (Recently noted.)

Va., Richmond.—B. H. Melton awarded contract to Samuel Stowe, Richmond, to erect two brick dwellings on Addison St., between Grove and Hanover Ave.; cost \$7000.

Va., Richmond.—P. J. Bagley awarded contract to J. W. McCabe, Richmond, to erect frame dwelling at 3516 E. Broad St.; cost \$3000.

HOTELS

La., Shreveport.—Peter Youree awarded contract to McGee & Co., Little Rock, Ark., for six-story hotel; cost \$300,000; plans by George R. Mann, Little Rock, Ark. (Recently noted.)

Tex., Eagle Lake.—W. A. Dallas awarded contract to J. M. Bryant, Houston, Tex., to erect Dallas Hotel; brick; 30 rooms; two stories; cost \$17,000 to \$18,000.

MISCELLANEOUS

Mo., Wellston, Station St. Louis.—Grandstand.—Universal Exposition Co. awarded contract to erect proposed grandstand at exposition grounds, near Wellston; about 300 feet long; seating capacity 4500; cost \$25,000.

Tenn., Knoxville.—Home.—Brookside Settlement Home Association, Mrs. G. W. Pickle, president, awarded contract to A. K. Ogle, Knoxville, to erect settlement house; two stories and basement; latter equipped for gymnasium, shower-baths, bowling alleys, manual-training equipment, laundry, etc.; colonial porch on first floor; steam heat; electric lights; plans by and construction under supervision of L. C. Waters, Knoxville.

Tex., Portland.—Clubhouse.—John G. Wilacy and associates awarded contract to erect clubhouse; cost \$8000.

W. Va., Wheeling.—Hospital.—North Wheeling Hospital, J. A. Campbell, chairman of committee, awarded contract to D. C. Jacovetty, Wheeling, to construct retaining wall preliminary to erection of wing of hospital, for which contract has been awarded. (Previously noted.)

N. C., Raleigh.—Veterinary Hospital.—Dr. L. F. Koonce awarded contract to D. C. Hill, Raleigh, to erect proposed veterinary hospital; mill construction; Carey's composition roofing; cost \$4500; plans by Frank B. Simpson, Raleigh.

Okl., Oklahoma City.—Clubhouse.—William A. Wells awarded contract to Gross Construction Co., Oklahoma City, to erect clubhouse for Oklahoma Golf & Country Club; plans by W. T. Lawrence, Colcord Bldg., Oklahoma City. (Mr. Lawrence recently noted to have contract.)

RAILWAY STATIONS

Mo., Kansas City.—Kansas City Terminal Railway Co. awarded contract to Fogel & Son, Kansas City, to erect freight station on 20th St., between Oak and Locust Sts.; steel frame; two stories; brick and stone; cost \$46,600; plans by John V. Hannah, Kansas City.

SCHOOLS

Ga., Cochran.—Graded School Trustees awarded contract to Smith Construction Co., Athens, Ga., to erect building; fireproof; stone and brick; nine classrooms, auditorium, etc.; plans by Sayre & Baldwin, 405 Bleckley Bldg., Anderson, S. C. (Recently noted.)

Ga., Atlanta.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., has plans by and awarded contract to Mackle-Crawford Construction Co., 221 Grant Bldg., Atlanta, to erect school and church building recently noted. (See "Churches" and "Machinery Wanted.")

La., Baton Rouge.—City awarded contracts to erect high school as follows: General contract at \$54,500 to J. D. Brown; plumbing and heating at \$1500 to C. C. Hartwell, both of New Orleans, La.; wiring at \$571 to W. C. Joubert, Baton Rouge, and vacuum cleaning at \$550 to H. N. Moody; plans by Stevens & Nelson, 1109 Hennen Bldg., New Orleans, La. (Recently noted.)

Miss., Mount Olive.—W. H. Smith, supervisor of elementary rural schools, Jackson, Miss., awarded contract to erect school; cost \$4000.

N. C., Salem Chapel.—Forsyth County School Board, Winston-Salem, N. C., awarded contract to C. S. Walker to erect school; two stories; two classrooms on first floor; auditorium on second floor.

Okl., Collinsville.—Trustees of School District No. 32 awarded contract to P. J. Duffy, Collinsville, and J. E. Burgess, Sapulpa, Okla., to erect three-story high school and two other schools; cost \$50,000.

S. C., Spartanburg.—School district awarded contract to J. P. Hertzog, Spartanburg, to erect school building; 20 rooms; office, etc.; ordinary construction; steam heat; electric lighting; cost \$42,000; plans by F. H. & J. G. Cunningham, Greenville, S. C. (Recently noted.)

Tenn., Mission Ridge (not a postoffice).—Hamilton County School Commissioners awarded contract at \$12,368 to Chambers &

Son, Chattanooga, Tenn., to erect school; plans by Huntington & Sears, Chattanooga, Tenn. (Recently noted.)

Tex., Palestine.—City Commissioners awarded contract to erect two additional brick schools.

Va., Oakwood (not a postoffice).—Tanners Creek School District, A. H. Foreman, division superintendent, Norfolk, Va., awarded contract at \$6262 to Building Construction Co., Norfolk, to erect school; plans by Lee & Diehl, Norfolk, Va. (Recently noted.)

STORES

Ala., Birmingham.—S. L. Tyson, Montgomery, Ala., awarded contract to Corrigan & Linn, Birmingham, to erect store building at Fourth Ave. and 20th St.; five stories; concrete, steel and vitrified brick; fireproof; awarded contract for heating to Selman Heating & Electric Co., Birmingham; reinforced concrete work let to Herndon-Hettrick Engineering Co., Empire Bldg., Birmingham; cost \$50,000; plans by H. D. Breeding, Birmingham. (Recently noted.)

Ala., Birmingham.—R. D. Burnett awarded contract to Southern Ferro-Concrete Co., Atlanta, Ga., to erect store; five stories; 50x140 feet; reinforced concrete; skeleton frame; plans by Harry B. Wheelock, Birmingham. (Previously noted to cost \$100,000.)

Fla., Alachua.—F. M. Stephens awarded contract to J. F. Townsend to erect store building; 30x35 feet; fireproof construction; hydro-carbon lighting system; tin roof; cost \$3500. (Recently noted.)

Ga., Atlanta.—Cheatham Bros. awarded contract to erect two stores at 453 Peachtree St. for client; 50x80 feet; one story and basement; brick; plate-glass fronts; cost \$15,000.

Mo., St. Louis.—Fred Bindbeutel Ferguson awarded contract to J. W. Holtzclaw, St. Louis, to erect store building; 50x40 feet; brick; cost \$3850; plans by Henry Schaumburg, 2811 Indiana Ave., St. Louis.

N. C., Raleigh.—P. L. Elias, New York, awarded contract to John W. Coffey, Raleigh, to remodel store; hot-air heat; cost \$4000; plans by Frank B. Simpson, Raleigh.

N. C., Winston-Salem.—H. R. Starbuck awarded contract to Fogle Bros. Company, Winston-Salem, to erect store; two stories; mill construction; gas and electric lighting; slag roof; cost \$13,000; plans by Willard C. Northrup; to be occupied by Efrid Bros. (Recently noted.)

S. C., Allendale.—B. R. Myrick awarded contract to J. J. Knopf, Fairfax, S. C., to erect proposed \$7000 brick store building; 107x75 feet; plans by J. H. Sams, Columbia, South Carolina.

S. C., Charleston.—W. B. Mixson awarded contract to Robert McCarrell, Charleston, to erect addition to building for Southern Fruit Co.; 29x145 feet; mill construction; tin roof; cost \$7000; plans by D. B. Hyer, Charleston. (Recently noted.)

S. C., Sumter.—Realty Holding Co. awarded contract to Carr Construction Co., Sumter, to erect business building; two stories; will contain two stores.

Tenn., Knoxville.—L. H. Spillman will erect three-story brick store on lot 23x83 feet; ordinary construction; gravel roof; steam heat; electric lighting; cost \$7000; plans by Baumann Bros., Knoxville; contractor, S. M. Beaumont Company, Knoxville; heating plant and elevator not in general contract.

Tex., Alvin.—G. Z. Sedwick awarded contract to erect bank and store building.

Tex., Abilene.—J. M. Alexander will expend \$7000 to erect store building; 50x100 feet; ordinary construction; gravel roof; contract recently noted awarded to R. C.

Lewis, Abilene, Tex. (See "Machinery Wanted.")

Tex., El Campo.—W. W. Dusen awarded contract to Zuber & Hill to erect proposed two-story 90x100-foot brick store and office building; plans by George Allison.

Tex., El Paso.—William Rosing awarded contract to erect store and apartment building. (See "Apartment-Houses.")

Tex., Ennis.—Mrs. Alexander awarded contract to Hix McCanness, Ennis, to erect store and office building; lower floor for three stores; upper floor for offices.

Tex., Lometa.—D. N. McCrea awarded contract to John Drew, San Saba, Tex., to erect block of buildings on Main St.; cost \$4000.

Tex., Normangee.—J. H. Wooley, A. J. Rogers, J. H. du Bois and T. W. & Z. N. Brown awarded contract to erect four brick stores on Main St.

Tex., Sealy.—W. F. Viereck awarded contract to erect glass-front building on Foulkes St.; brick; 30x50 feet.

Tex., Mercedes.—E. E. Evans awarded contract to erect business buildings on Texas Ave.

Tex., San Antonio.—Hicks & Hicks awarded contract to Jack Haynes, San Antonio, to erect two-story building; stores with rooms above; ordinary brick construction; 90x100 feet; steam heat; electric lighting; tin or gravel roof; cement sidewalks; cost \$16,000; plans by Atlee B. Ayres, San Antonio. (Recently noted.)

Va., Charlottesville.—M. Rubin & Son awarded contract to King Lumber Co., Charlottesville, to erect proposed stores and dwellings; two stories; 65x75 feet; three stories; dwellings above; ordinary construction; hot-water heat; gas and electric lighting; cement sidewalks; cost \$12,000; plans by E. J. Bunch, Charlottesville.

Va., Richmond.—W. T. Smith awarded contract to Delaney & Gann, Richmond, to erect brick store at 408 W. Broad St.; cost \$11,000.

THEATERS

W. Va., Charleston.—J. B. Crowley has plans by and awarded contract to W. A. Abbitt to erect theater and office building; 53x162 feet; fireproof construction; steam heat; cement sidewalks; probably tile roof; cost \$35,000; seating capacity, 1200. (Consolidated Amusement Co. recently noted to erect theater.)

WAREHOUSES

Ga., Augusta.—George R. Lombard awarded contract to T. O. Brown & Son to erect two warehouses; 40x200 feet; brick; metal roof; electric lighting; tin roof; cost \$8000; plans by G. L. Precher, Augusta. (Recently noted.)

Ga., Valdosta.—Lowndes Alliance Warehouse Co. awarded contract to Puckett & Bowen, Valdosta, to erect addition to warehouse; cost \$3000.

Ky., Mt. Sterling.—Farmers' Loose Leaf Tobacco Warehouse Co. awarded contract to Adolph Deltz to erect proposed warehouse; fireproof; brick, steel and concrete; ground floor space 75,000 square feet; capacity 300,000 pounds of tobacco; cost \$25,000.

Mo., Kansas City.—Lincoln Fireproof Storage Co., 3129 Frost Ave., awarded contract to Reyburn-Laird Construction Co., 608 Bryant Bldg., Kansas City, to erect warehouse; five stories and basement; 80x124 feet; fireproof; hot-water heat; 8x20-foot elevator; Barrett's specification roofing; cost \$30,000; plans by Smith, Rea & Lovitt, 602 Finance Bldg., Kansas City.

Tex., Corpus Christi.—San Antonio (Tex.) Machine & Supply Co. awarded contract to J. W. Birmingham, Corpus Christi, to erect office and warehouse building; two stories; brick; 50x300 feet; cost \$25,000.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Mobile.—Stockholders of the Mobile West Shore Traction Co. have, it is reported, authorized an issue of \$2,000,000 of bonds for the proposed electric railway from Mobile to Pascagoula, Miss., about 40 miles. The directors will arrange details. Among those interested are H. Austill, Chas. G. Ollinger, E. E. Posey, W. B. Delchamps, John J. Meyer, Ervin & McAleer, J. N. McAleer, Thomas A. Yeend, R. K. Warren, H. T. Hartwell, M. J. McDermott, Mrs. A. A. Kersling and Jerre Austill.

Ala., Boaz.—Miller & Brown of Birmingham, Ala., are pushing survey for the proposed Birmingham & Chattanooga Railroad between Boaz and Birmingham, survey having been finished from Boaz to Chattanooga. J. M. Spradlin, Boaz, Ala., is president.

Ala., Dothan.—Dothan, Marianna & Gulf Railroad Co., capital \$100,000, is incorporated for a line between Dothan, Ala., and Marianna, Fla., about 35 miles. Incorporators: E. L. Marbury, president, Malone, Fla.; J. D. Smith, vice-president, Marianna, Fla.; D. C. Carmichael, second vice-president; John Sanders, general manager, and D. W. Baker, assistant general manager, all of Dothan, Ala. Others interested are G. H. Malone, J. R. Faircloth, J. B. Young and Joseph Baker of Dothan, Ala.; M. L. Dekle of Marianna, Doc Willis of Greenwood and J. W. Malone of Malone, Fla.

Ala., Mobile.—Jett Bros. Contracting Co. is completing improvements on the river front for the Mobile & Ohio Railroad, including 1500 feet of trestling on either side of Three-Mile Creek, with a drawbridge.

Ark., Monte Ne.—President George D. Locke

of the Ozark Land & Lumber Co., Rogers, Ark., says that it is building six miles of railroad from Monte Ne into timber lands of the company, and it is expected to be completed about November 1, when the timber will be developed.

Ala., Union Springs.—W. M. Blount, president, says that no contracts are yet awarded for the extension of the Birmingham & Southeastern Railway from Tallahassee to Rockford, Ala., 29 miles. Bridging will consist of trestles only. Country rough. D. B. McKenzie is chief engineer.

Ark., Little Rock.—W. T. Tyler, general manager St. Louis & San Francisco Railroad, Springfield, Mo., says that the proposition of an extension to Little Rock has been considered only in the most tentative manner; at present it is at rest. This refers to recent press report.

D. C., Washington.—The Washington, Westminster & Gettysburg Railway Co. has applied to the Maryland Public Service Commission for authority to issue \$630,000 of bonds and \$100,000 of stock for the first section of line to be built, about 18 miles, from Washington to Brentwood and Sandy Spring, Md. W. H. Saunders is president and I. H. Saunders secretary of the road at 1407 F St. N. W., Washington, D. C.

Fla., Melbourne.—The Union Cypress Co. says that its 18-mile railroad to reach timber west of Melbourne will be completed by July 1, as 12 miles of track are now laid and a trestle over St. John's River is partly finished.

Fla., Ocala.—E. P. Rentz says that E. P. Rentz & Son are building track—which will be a permanent feeder to Ocala Northern Railroad, of which he is president—to timber purchased on Oklawaha River. It will be extended to Kyle & Young's farm.

Ga., Atlanta.—Charter is granted to the Atlanta & Macon Railway Co., as applied for several weeks ago; capital \$100,000. Line will be about 87 miles long. Headquarters in Atlanta. Incorporators are Kennett Cowan, W. D. Sheahan, Sellar Bullard of Chicago; C. G. Young of New York; Hollins N. Randolph, Robert S. Parker, Hugh M. Scott of Atlanta; W. J. Massee and Howard R. Stewart of Macon; Seaton Grantland, W. J. Kincaid and J. M. Brawner of Griffin, Ga. A special dispatch says that the company has asked authority of the Georgia Railroad Commission to issue \$3,600,000 of bonds and an equal amount of stock for the proposed line. Kennett Cowan & Co., Corn Exchange Bank Bldg., Chicago, Ill., wire that they are arranging details quickly, and expect to start construction soon as possible.

Ga., Augusta.—Concerning reports that the Charleston & Western Carolina Railway would spend \$2,000,000 to handle Clinchfield traffic, President T. M. Emerson of Atlantic Coast Line, who is vice-president of the road, wires that directors have taken no action as to extraordinary expenditure, but the company is currently spending considerably more than that in improving its property and equipment. Chief engineer is E. B. Pleasants, Wilmington, N. C.

Ga., Columbus.—Columbus, Chattahoochee Valley & Gulf Railway Co., chartered to build from Atlanta via Columbus to Georgetown, Ga., about 180 miles, and thence probably to the Gulf of Mexico, has organized by electing J. Johnson Williams, president; L. F. Humber, vice-president; S. M. Quincey, secretary and treasurer; Josiah Flournoy, chief engineer and general manager; T. T. Miller, attorney. The board of directors will consist of Messrs. Williams and Humber, together with Arthur Bussey, L. H. Chappell, E. P. Owsley and W. S. Sheppard. Capital is \$500,000, all of which is subscribed. Survey will begin soon.

Ga., Darien.—The Georgia Coast & Piedmont Railroad is reported preparing to build the extension from Darien to Brunswick, Ga., about 18 miles, for which part of the \$3,500,000 of bonds authorized by the State Railroad Commission will be used—about \$2,140,000, it is stated. G. De Sola Mendes is vice-president and general manager at Darien, Ga. Another proposed extension is from Reidsville to Vidalia, about 25 miles.

Ga., Milltown.—W. W. Webb of Hahira, Ga., president of the Georgia, Alabama & Western Railway Co., is reported authorized by the directors to make survey and obtain estimate of cost of construction of its proposed line from Milltown to Blakely, Ga., about 150 miles. (See Manufacturers Record of February 1, 1912.)

Ky., Covington.—An official of the Cincinnati, Louisville, Lexington & Maysville Traction Co. is quoted saying that grading is in progress from Covington to Owenton, Ky., 45 miles, via Independence, Walton, Crittenden, Dry Ridge and Jonesville. About 10 miles of grade is done. One steel bridge 400 feet

long required. Contracts let to Perry Simpson and J. Dawatt, both of Dry Ridge, Ky., which is also the address of W. T. S. Blackburn, president of the company.

Ky., Winchester.—John Howe Peyton, assistant to president, and chief engineer of construction, Louisville & Nashville Railroad, Louisville, Ky., says contract has been let to Winston & Co. of Richmond, Va., for about 26 miles of heavy railroad construction from Winchester to Irvine, Ky., including two short tunnels and two important river crossings.

Ky., Winchester.—Further particulars about proposed extension Louisville & Nashville Railroad from Winchester to Irvine, Ky., about 26 miles, for which contract is let to Winston & Co., Richmond, Va., are that maximum grade will be 4 of 1 per cent. and maximum curvature 4 degrees. About 2,000,000 cubic yards of earth and stone will have to be moved, and the concrete work will be about 20,000 cubic yards. Practically all work will be sublet. Office established at Winchester, Ky.

La., Clinton.—The New Orleans, Clinton & Birmingham Railroad Co., which proposes to build a line from Clinton via Greenwell Springs and Hope Villa to a connection with the line of the Louisiana Railway & Navigation Co.'s line, about 40 miles, has elected officers thus: Isidor Mayer of Clinton, La., president; A. J. Kerfoot of Jonesboro, Ark., vice-president and general manager; B. J. Mayer of New Orleans, secretary and attorney; C. S. Vanwart, treasurer. Mr. Vanwart is cashier of the Bank of Clinton; construction to begin this summer.

La., Franklinton.—Mass-meeting was held to build a motor railway from Mandeville via Covington, La., to Franklinton. Robert Babington presided. D. E. Sheridan and others are the committee.

La., New Orleans.—T. J. Freeman, vice-president Texas & Pacific Railway, is quoted saying it proposes to spend \$2,000,000 for new freight and passenger terminals in New Orleans, this depending upon passage of necessary ordinances by the City Council. Site of terminals is not disclosed. C. H. Chamberlin is chief engineer at Dallas, Tex. Mr. Freeman wires that plans are not yet prepared.

La., New Orleans.—In addition to other work, the Southern Railway and the St. Louis & San Francisco Railroad will build yard tracks at the Chalmette terminals. W. H. Wells, Washington, D. C., and F. G. Jonah, St. Louis, Mo., are chief engineers of construction for the roads, respectively.

La., New Orleans.—The Public Belt Railroad, according to A. F. Barclay, assistant engineer, will build service tracks to a proposed 1500-foot wharf from Louisa St.; also a small storage yard, each to have capacity of 125 cars. Grading and track are expected to cost about \$55,000.

Miss., Laurel.—Harry Bell is surveying for the proposed interurban railway of the Laurel Light & Railway Co. from Laurel to Ellisville, Miss., seven miles.

Miss., Meridian.—The Meridian & Deepwater Railway Co. is reported pushing construction southeast and has graded 3½ miles through the mountains en route to Myrtlewood, Ala.

Mo., Joplin.—President C. E. Schaff of the Missouri, Kansas & Texas Railway denies recent press report that the company would build a line from Joplin to Springfield and also from the latter point to Jefferson City, Mo. He says it has no such intention.

Mo., St. Joseph.—Chicago, Burlington & Quincy Railroad is reported to have surveyed for a new route between St. Louis, St. Joseph and Kansas City. Some parts of existing lines are to be included. W. L. Breckenridge, Chicago, Ill., is chief engineer.

Okla., Woodward.—Wichita Falls & Northwestern Railway has completed line and extended regular service to Woodward. Construction is proceeding from Woodward to Forgan, Okla., and is expected road will be operating there by July 1.

S. C., Summerville.—The Charleston-Summerville Development Co. has been organized and is contemplating construction of an electric railway from Summerville to Charleston, about 20 miles. J. L. David is president; John A. Hertz, vice-president; M. David, secretary; J. D. Harby, treasurer; all at Summerville.

Okla., Lawton.—John D. Kennard will, it is reported, immediately begin survey for the proposed interurban railway of the Lawton Railway & Lighting Co. from Lawton to Fort Sill, about six miles. Construction to begin by June 15.

Tenn., Chattanooga.—The Queen & Crescent Route is considering construction of double track from Erlanger to Williamstown,

Ky., 28 miles, and also from Boyce to Chattanooga (Citic), Tenn., 2 miles, but surveys are not yet complete. Curtis Dougherty, Cincinnati, O., is chief engineer.

Tenn., Harriman.—The Tennessee Timber, Coal & Iron Co. is reported to have completed grade for a railroad from Nemo, Tenn., on the Queen & Crescent Route, into timber land, and track will be laid as soon as bridge over Emory River is finished. Latter will be 400 feet long, with nine concrete piers. Two steel bridges over Island Creek also required. Expected to extend line 25 miles, perhaps to Crossville, Tenn. Headquarters of company at Harriman. S. W. Miller is general superintendent and B. C. Lacy chief engineer. John H. Reynolds of Harriman has some of the contracts.

Tenn., Memphis.—Southern Railway is reported contemplating construction of new yards south of Calhoun Ave. and east of Rayburn Blvd. W. H. Wells, Washington, D. C., is chief engineer of construction.

Tex., Amarillo.—F. T. Burnham, Dwight Bldg., Kansas City, Mo., says that the Texas, Kansas & Omaha Railroad Co., of which he has just been elected president, will build about 100 miles of line from Amarillo to Texhoma, and survey will begin about June 15, to be completed by October or November. C. B. Pash of Amarillo, Tex., is secretary. General manager and chief engineer yet to be selected.

Tex., Bremond.—M. D. Watson, manager of the Wootan Wells Company, is reported planning the construction of an electric railway from Wootan Wells to Bremond.

Tex., Bloomington.—The St. Louis, Brownsville & Mexico Railway will build a line from Heyser to Austwell, Tex., approximately 17 miles. F. G. Jonah, St. Louis, Mo., is chief engineer.

Tex., Dallas.—E. T. Moore, manager Dallas Consolidated Electric Street Railway, says that nothing definite has been done in connection with the proposed interurban railway from Dallas to Terrell, Tex.

Tex., Denison.—J. W. Hoffman, general manager Missouri, Oklahoma & Gulf Railway, is quoted saying that construction will begin by July 1 on the contemplated extension to Dallas, Tex., and possible to Fort Worth. J. J. Harrison, Muskogee, Okla., is chief engineer.

Tex., Fort Worth.—W. F. Carter, vice-president Mercantile Trust Co., St. Louis, says that it has no connection whatever at present with the construction or financing of the Fort Worth & Mineral Wells Railroad. This refers to a recent press report.

Tex., Granada.—Kansas City, Mexico & Orient Railroad has sold, it is reported, \$1,000,000 of 5 per cent. receivers' certificates to R. L. Day & Co. of Boston at 98.52 to complete its line from Granada to Fort Stockton, 32 miles. Extension to Alpine also planned. W. W. Colpitts, Kansas City, Mo., is chief engineer.

Tex., Jefferson.—A movement is progressing to raise \$10,000 bonus in addition to right of way and terminal site in Jefferson for the Black Bayou Railroad, now under construction. L. S. Schluter, T. D. Rowell and Charles W. Carlson are among those mentioned as interested.

Tex., Lubbock.—Contract reported let to W. H. Denison for Santa Fe's cut-off from Lubbock to Texico to be completed January 1 next. C. F. W. Felt, Topeka, Kans., is chief engineer.

Tex., Paris.—In addition to 5000 feet of trestle the Paris & Mount Pleasant Railroad will build a 150-foot steel span over Sulphur River on the extension from Bogota to Mount Pleasant, Tex., 23 miles. H. P. Mobberly, Paris, Tex., is chief engineer.

Tex., Waco.—The report that the Texas Central Railroad would spend \$350,000 for terminals in East Waco is officially denied.

Tex., Waco.—Rumored that the St. Louis Southwestern Railway will spend about \$10,000,000 of its new bond issue to build from Waco to Galveston, Tex., about 200 miles. Officials of the road are quoted saying that no decision has been reached and that there is nothing definite about the plan. President F. H. Britton recently said when in Texas, according to reports from Dallas, that the company would spend considerable money on improvements in that State. C. D. Purdon is chief engineer at St. Louis, Mo.

Va., Culpeper.—The Blue Ridge Development Co. is to promote the construction of a steam railroad from Culpeper to Washington, Va., about 29 miles. Capital \$25,000. D. G. Wright is president, J. James Miller and John J. Miller vice-presidents, J. L. Fray secretary and treasurer. T. P. Stanley, formerly of Athens, Ga., is engineer in charge.

Va., St. Paul.—Information from an official source indicates that there is no truth, at least for the present, in the press report that the Carolina, Clinchfield & Ohio Railway would build from St. Paul to Norton, Va., in addition to constructing its northward extension to Elkhorn City, Ky.

W. Va., Martinsburg.—Western Maryland Railway is reported to have let contract to R. Gallardi of Connellsville, Pa., to grade the proposed branch from Charlton, Md., south 3½ miles into West Virginia, including a spur about half a mile long to proposed quarries. This includes a steel bridge 1175 feet long over the Potomac, which will be built by the Pennsylvania Steel Co. H. R. Pratt, Baltimore, Md., is chief engineer.

W. Va., Morgantown.—A letter says that Clay district, Monongalia county, is to vote on \$200,000 of bonds to purchase equal amount of bonds Morgantown & Dunkard Valley Railroad Co., thus guaranteeing construction of line to Blacksville, 15 miles from Cassville, present terminus. Includes several small bridges. J. Aml Martin is general manager and G. B. Hartley chief engineer at Morgantown, W. Va.

W. Va., Princeton.—Concerning a recent press report that he had considered a proposition to build an electric railway from Princeton to Bluefield, W. Va., G. L. Baker, 821 Southern Bldg., Washington, D. C., says that he has taken the matter up only in a very general way and not with a view of doing anything definite.

STREET RAILWAYS

D. C., Washington.—Bill has been introduced in U. S. Senate to incorporate Giesboro Railway Co. to build line about one mile long from Congress Heights to the plant of the Washington Ordnance Co. at Giesboro. Incorporators, Charles V. Wheeler of the steel company, Corcoran Thom, Alex. G. McKenna, H. F. Clark, Eben B. Clark, James T. Porter and J. W. Kennear. The Washington Railway & Electric Co. may do the work.

Ga., Macon.—Macon Railway & Light Co. is granted franchise for double tracks on Forsyth St. and on Mulberry St.

Ga., Macon.—Georgia Public Service Co. is granted franchise for street railway in Macon. W. J. Massee and others interested.

La., New Orleans.—Leo A. Marrero of New Orleans has purchased franchise for an electric railway from Gretna to Waggaman. It is expected that the New Orleans & Southern Railway will be interested in the construction. R. S. Stearnes is superintendent.

Miss., Corinth.—Rufus Jones, secretary Business Men's Club, Corinth, Miss., says there is opinion that a street-railway in Corinth might be profitable. It appears that the subject is under consideration and a line may be constructed.

N. C., Fayetteville.—Fayetteville Light & Power Co. is incorporated to absorb the Fayetteville Gas & Electric Co. and the street railway. Carolina Power & Light Co. of Raleigh is said to be backing the deal. Improvements may be made.

S. C., Spartanburg.—F. H. Knox, vice-president and general manager, is quoted saying that the Spartanburg Railway, Gas & Electric Co. will improve the street railway.

Tex., Dallas.—Reported that the Dallas Consolidated Electric Railway will double-track Bryan St. car line from Cantegral to St. Joseph St. Authority has been granted.

W. Va., Parkersburg.—Parkersburg, Marietta & Interurban Railway Co. of Parkersburg amended charter for extensions and branches. One will be from Dudley Rd. to North Parkersburg. S. D. Camden is president and general manager.

Kennedy Valve Contracts.

Among the recent contracts for Kennedy valves, manufactured by the Kennedy Valve Manufacturing Co., Elmira, N. Y., are valves for the heating plant at Johns Hopkins Hospital, Baltimore; valves and hydrants for the water supply system at the Tuskegee Institute, Tuskegee, Ala.; a large number of valves for the Kansas City, Mo., water-works, and many others throughout various parts of the country. A contract for hydrants for the Water-works plant at Schenectady, N. Y.; valves and hydrants for water-works at Hamilton, Ill., and Navarre, O., and valves for Winthrop, Mass., are included; also valves throughout the Perkins Institute for the Blind at Watertown, Mass. This company manufactures valves for various purposes, fire hydrants, and indicator valves for automatic sprinkler equipment, with agencies in various cities, including one at New Orleans. Prompt attention will be given to all inquiries regarding valves and hydrants.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Abattoir.—City of Jackson, Miss., A. C. Crowder, Mayor, wants to correspond with individuals or corporations interested in abattoir franchise.

Altars.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., wants prices on altars.

Automobiles.—See "Manufactures."

Blower System.—Rocky Mount Sash & Blind Co., Rocky Mount, N. C., wants prices on blower pipe system.

Boilers.—See "Machinery, etc."

Boilers.—J. H. Macleary, Suffolk, Va., in market for two return tubular boilers: 125 horse-power each; with full fronts and all necessary fittings; 125 pounds steam; A1 condition; delivered f. o. b. Suffolk.

Boiler and Engine.—Contractors' Machinery & Supply Co., Steuben and Carson Sts., West End, Pittsburgh, Pa., in market for 25 and 40 horse portable boiler mounted on trucks, with engine, in good condition.

Bridge.—Manatee County Commissioners, Bradenton, Fla., want prices on second-hand steel draw for one-half mile bridge to be built from Cortez to Cortez Beach, on Anna Maria Island.

Bridges.—Sealed proposals received by Drainage Commission, Back Swamp and Jacob Swamp Drainage District, Lumberton, N. C., until noon June 12 for constructing (in addition to extensive canal construction lately noted) 16 wooden and 5 steel bridges complete, with foundation, etc.; F. F. Wetmore, engineer; Thomas L. Johnson, attorney for drainage district.

Bridges.—Business Men's Club, Rufus Jones, secretary, Corinth, Miss., wants prices on 20-foot, 25-foot, 35-foot and 50-foot iron bridges for turnpike road from Corinth, Miss., to Pittsburg Landing, Tenn.

Building Materials.—Geo. G. Young, Mayor, Cumberland, Md., wants catalogues, samples and prices on building materials for colonial residence.

Burlap Bags.—Crozet Ice & Cold Storage Corporation, Crozet, Va., wants addresses of manufacturers of burlap bags for shipping ice.

Cars.—Virginia-Carolina Railway Co., Abingdon, Va., wants 20 standard-gauge six-wheeled Western or K. & J. dump cars; good condition, subject to rigid inspection.

Cement and Limestone.—R. A. Brown's Sons, Concord, N. C., want information, etc., relative to non-staining cement and limestone for retaining wall.

Chipping Hammer.—Norfolk Bed Manufacturing Co., Norfolk, Va., in market for electric chipping hammer or riveter.

Clayworking Machinery.—F. Z. Bishop, Macmanns, Corpus Christi, Tex., wants prices on plant (second-hand preferred) for making building brick, fire-brick and tiling.

Concrete Construction.—W. W. Sale, Adjutant-General, Richmond, Va., receives bids until noon June 10 to furnish material and construct target butts and target-house at Rifle Range, Virginia Beach; information on application.

Concrete Mixer.—F. H. Fleming & Co., 158 St. Francis St., Mobile, Ala., want prices on small concrete mixer.

Cottonseed Oil.—P. D. Trakides & Co., Varna, Bulgaria, want to correspond with exporting manufacturers of cotton oil; want samples and quotations, with export discount or commission.

Cranne.—Contractors' Machinery & Supply Co., Steuben and Carson Sts., West End, Pittsburgh, Pa., in market for 20-ton locomotive crane, with orange-peel or clamshell buckets, one yard capacity.

Culverts.—Valley Turnpike Co., Winchester, Va., wants prices from manufacturers of road culverts.

Crusher.—City of Newnan, Ga., wants portable rock-crushing equipment for street-paving work; E. G. Cole, chairman street committee.

Crushing Plants.—James H. Harlow Company, 3 E. Lexington St., Baltimore, Md., invites owners of portable stone-crushing plants to correspond or call.

Ditching Machinery.—J. W. Gurley & Co., Mobile, Ala., want prices on No. 1 Municipal and Parson's trenching machines.

Drainage.—Riverside Drainage Commission, Greenville, Miss., will open bids July 1 for dredging and excavation; 1,961,000 cubic yards main canal; 630,000 cubic yards, 14 laterals; cost about \$350,000.

Elevators.—See "Manufactures."

Electrical Machinery.—Gussler & Rosella, Huntington, W. Va., want prices on electrical equipment. (See "Machinery, etc.")

Engines.—See "Machinery, etc."

Engine.—J. W. Gurley & Co., Mobile, Ala., want prices on 7x10 Lidgetwood cable-way engine.

Engines.—See "Water-power Development."

Filter Plant.—City of Cartersville, Ga., G. W. Young, Mayor, wants information and prices on water-works filter.

Fire-escapes.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., wants prices on fire-escapes for three-story church and school building.

Fire Hose.—Baltimore (Md.) Board of Awards receives bids until 11 A. M. June 12 to furnish fire department with 7000 feet seamless multiple three-ply rubber-lined fire hose; specifications furnished on application to P. W. Wilkinson, secretary fire department; certified check \$500.

Flooring.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., wants prices on flooring for three-story church and school, 72x52 feet.

Galvanizing Plant.—See "Metal-working Machinery."

Grading.—Roland Park Co., 404 Roland Ave., Roland Park, Baltimore, Md., will receive proposals for grading 69,000 cubic yards earth excavation, sections 5 and 6, at Guilford; plans and specifications at office of company.

Gravel.—See "Sand and Gravel."

Handles.—Business Bourse, Sanford Taylor, assistant manager, 260 Broadway, New York, wants (for client) prices from manufacturers on ash and hickory, pick, rake, axe, sledge, hay fork and hoe handles in quantities.

Heating Plant.—Board of Education, T. C. Young, secretary, Dunn, N. C., wants prices on heating plant for \$15,000 school building.

Heating Plants.—B. K. Beacham, Abbeville, S. C., wants information, etc., on steam-heating plants for dwellings.

Heating Plant.—Samuel D. Jones, business director Board of Education, Administration Bldg., 8th and Chestnut Sts., Louisville, Ky., receives bids until 8 P. M. June 14 for following: Boiler and toilet-house, plumbing and heating apparatus at California school; installation of heating plant at Central colored high school; alterations and additions to boiler-room and installation of boilers at Madison-street school; boiler and toilet-house, plumbing and heating apparatus at Washington school; plans and specifications obtainable from Board of Education; for general conditions, certified check, bend, etc., see specifications; J. E. Henry, architect.

Holsting Engine.—John G. Duncan Company, Box 265, Knoxville, Tenn., wants second-hand 6, 8, 10 or 12-horse-power double vertical holsting engine without boiler; good order; prompt shipment.

Iron Work.—Willard C. Northrup, Winston-Salem, N. C., wants catalogues, etc., on iron work for steel cells.

Levee Construction.—Commissioners Red River Levee District No. 1, N. D. Harrel, secretary, Lewisville, Ark., receives bids until 10 A. M. July 2 for 10 miles levee enlargement in Lafayette county; for particulars apply to Henry Moore, Jr., president of district, Texarkana, Ark., or N. D. Harrel, secretary, Lewisville.

Limestone.—See "Cement and Limestone."

Machinery, etc.—Gussler & Rosella, Huntington, W. Va., want prices on boilers, engines, pumps, contractors' machinery, building materials, electrical equipment and general machinery and supplies.

Manufactures.—Societe Generale D'Explosifs & De Fournitures De Mines, 57 Rue de Chateaudun, Paris, France, wants to correspond, with view to sole agencies for

American factories; interested especially in automobiles, tools, motors, pumps, lifts and mining supplies.

Metal-working Machinery.—J. Brackman, 2831 Q St., Coney Island, N. Y., wants information and prices on machine for making metal wall match holder.

Metal-working Machinery.—H. T. Klugel, proprietor Emporia Cornice & Skylight Works, North Emporia, Va., wants prices on presses for heavy iron; presses to be used in manufacturing garbage cans from black sheets; also prices on small galvanizing plant.

Mining Supplies.—See "Manufactures."

Oil Mill.—Farmers & Ginners' Oil Mill Co., Sulphur Springs, Tex., wants prices on four-press oil mill.

Oil Heaters.—Mann Plumbing Co., Lakeland, Fla., wants prices on oil heaters for house use.

Package-wrapping Machines.—A. P. Brantley Company, Blackshear, Ga., wants addresses of manufacturers of machines for wrapping packages. (Such as used in stores.)

Paving.—City Council, Tallahassee, Fla., receives bids until 8 P. M. June 10 for 22,000 square yards brick paving and 12,000 feet curbing; plans and specifications on file with J. E. Craig, City Engineer; J. Stuart Lewis, chairman street committee.

Paving.—Street committee (John J. Price and others), Frostburg, Md., receives bids until 2 P. M. June 14 to grade and pave 800 feet on Beall St.; plans and specifications on file with William Harvey, City Engineer; bids to be made on blank forms furnished by City Engineer; certified check \$100.

Paving, etc.—Shelby England, of England Realty Co., 113 W. 2d St., Little Rock, Ark., receives bids until 2 P. M. June 8 to construct roads, sidewalks, sewers, etc., in Young's Park; plans and specifications on file with Frank M. Blaisdell, landscape architect and civil engineer, 917-918 Southern Trust Bldg., Little Rock, Ark.; certified check 3 per cent. of proposal.

Paving.—Baltimore (Md.) Board of Awards receives bids at office of City Register, City Hall, until 11 A. M. June 12 to construct macadam roadway at Back River disposal plant, sanitary contract No. 91, and house connections across footways in district No. 15, sanitary contract No. 92; contract No. 91 calls for 600 cubic yards excavation within limits roadway; 1600 cubic yards borrow; 3100 square yards macadam; 480 linear feet brick gutter; contract No. 92, 22,750 linear feet vitrified pipe house connections; 18,500 linear feet relaying brick, etc., pavement; 13,000 square feet relaying granolithic, etc., pavement; specifications and plans obtainable upon application at office of Sewerage Commission, 904 American Bldg.; charge of \$5 for each specification and blueprint; certified checks, contract No. 91, \$300; contract No. 92, \$1500; Charles England, chairman Sewerage Commission.

Paving.—Sealed proposals, address to Jos. Saxton, chairman, received until 8 P. M. June 20 by Board of Commissioners for Street Improvement District No. 198 (West 10th St.), Little Rock, Ark., for grading, draining, curbing and paving with wood blocks, asphalt, bitulithic, concrete, tar-bound macadam or other materials; plans and specifications at offices of Ford & McCrea, district engineers; \$500 certified check.

Paving.—City of Poteau, Okla., will receive bids until June 10 for street improvements: 35,300 square yards water-bound macadam, 6100 square yards asphalt-bound macadam, 9000 cubic yards grading, 22,630 linear feet concrete curbing and 28 concrete cross-drains; certified check \$1000; plans, specifications, profiles, etc., obtainable from Muller-Engel Engineering Co. upon payment of \$5.

Paving, etc.—Board of Control, City

Paving.—W. H. Lark, chairman Street Improvement District No. 189, Little Rock, Ark., receives bids until noon June 10 to grade, curb, gutter and drain West 13th St. from Park Ave. to May St.; certified check \$250; plans and specifications on file with H. Levinson, engineer and superintendent of Public Works.

Piles.—U. S. Engineer Office, Customhouse, St. Louis, Mo. Sealed proposals for furnishing 20,000 piles received until 11 A. M. June 15, and then publicly opened. Information on application. Charles L. Potter, Lieutenant-Colonel, Engineers.

Pumps.—See "Manufactures."

Pumps.—See "Machinery, etc."

Quarrying Equipment.—Eureka White Marble Quarries, G. W. Grayson, president, Bloxi, Miss., will receive bids on equipment for marble quarry at Talladega Springs, Ala.; machinery to include channel machines, rollers, holsting engine, etc.

Road Construction.—Bids received at Bank of La Crosse, La Crosse, Va., until noon June 7 to construct about 30 miles soil roads; plans and specifications on file with P. St. J. Wilson, State Highway Commissioner, Richmond, Va.; certified check \$250.

Road Construction, etc.—Sealed proposals, endorsed "Proposals for grading, roadway, and wireless ground system," will be received at Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 A. M. June 22, and then publicly opened, for grading, roadway, and wireless ground system at naval reservation, Arlington, Va. Plans and specifications obtainable on application to bureau. H. R. Stanford, Chief of Bureau.

Road Construction.—Randolph County Commissioners, Roanoke, Ala., receive bids until noon June 29 to grade, drain and surface with sand-clay or top-soil State-aid road; expenditure \$10,000; certified check \$400; W. S. Keller, State Highway Engineer, Montgomery, Ala.

Roofing.—Rocky Mount Sash & Blind Co., Rocky Mount, N. C., wants prices on rubber and composition roofing.

Safe, etc.—Bank of Fairfax, Fairfax, S. C., wants prices on safe, vault and other bank fixtures.

Sand and Gravel.—Weber Chimney Co., 152 McCormick Bldg., Chicago, Ill., in market for sand and gravel delivered at Jefferson City, Mo.

Sand and Gravel.—Burkes Construction Co., Front and Gordon Sts., Hattiesburg, Miss., wants prices on 1800 yards of coarse sand and 2100 yards of gravel; f. o. b. cars Kosciusko, Miss.

School Furniture.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., wants prices on school desks, blackboards, etc.

Seating.—I. Lissner, 95 N. Boulevard, Atlanta, Ga., wants prices on church pews.

Seating.—W. F. Murphy, Wallace, N. C., wants to correspond with manufacturers of and dealers in church pews.

Seating.—James A. Dezell, chairman board of trustees, Greensboro, Fla., wants prices on about 120 single seats, different sizes, for school.

Sewing Machinery.—Southwestern Iron & Metal Co., 211 E. Bond St., Denison, Tex., wants to purchase machine to patch second-hand sacks.

Sewer Construction.—F. S. Shields, secretary Sewerage and Water Board, City Hall Annex, New Orleans, La., receives bids until noon August 15 to construct reinforced concrete siphon under New Basin Navigation Canal at Broad St.; contract 45-D; George G. Earl, general superintendent.

Sewer Construction.—See "Paving, etc."

Sewer Construction Materials.—Jefferson Sanitary Co., Geo. S. Niedermeyer, general manager, Jefferson, Tex., wants prices on flush tanks, 3½ miles 10-inch, 8-inch and 6-inch pipe; cast-iron manholes and covers; also wants to correspond with manufacturers of septic tank and disposal plants who can furnish diagrams of plant for city of 5000 to 10,000 population.

Sewer Construction, etc.—City of Doniphan, Mo., receives bids until 8 P. M. June 11 to construct sanitary sewer system; plans and specifications on file with Frank L. Wilcox, Chemical Bldg., St. Louis, Mo., and at Ripley County Bank, Doniphan; certified check \$200; Buell Cable, City Clerk.

Sewer Construction.—R. M. Clayton, chief of construction, Atlanta, Ga., receives bids until 10 A. M. June 8 to construct connection of Peachtree Creek Interceptor and disposal works, extension of culvert, etc., at Peachtree Creek disposal plant; plans and specifications may be obtained on application to Mr. Clayton.

Smokestack.—Rocky Mount Sash & Blind Co., Rocky Mount, N. C., wants prices on smokestacks.

Sprinkler System.—Rocky Mount Sash & Blind Co., Rocky Mount, N. C., wants prices on sprinkler system.

Skidder.—H. L. Lawton, Lena, S. C., wants second-hand skidder; 25 horse-power; good order; on trucks preferred.

Steam Shovel.—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., in market for 110-ton Vulcan steam shovel; class "B" or equal to.

Stone and Spalls.—Bids for furnishing 50,000 cubic yards stone and 20,000 cubic yards spalls received at United States Engineer Office, Customhouse, St. Louis, Mo., until 11 A. M. June 15. Information on application. Charles L. Potter, Lieutenant-Colonel, Engineers.

Store Front.—D. S. Sanford, Milledgeville, Ga., wants prices on plate-glass front for two-story store and office building.

Tools.—See "Manufactures."

Vault.—Haskell County Abstract Co., Stigler, Okla., wants prices on vault and office fixtures.

Water Meters.—Commissioners District of Columbia, Washington, D. C., receive bids until 2 P. M. June 12 to furnish and deliver 10,000 five-eighths-inch and 250 three-quarter-inch water meters for use in water department. Specifications, blueprints and proposal forms may be obtained from Purchasing Officer, D. C.

Water-power Development.—J. C. C. Van Carlsberg, Laurel Glen, Conn. (Railroad Station, Westerly, R. I.), wants bids from hydro-engineer for improvement of large water-power.

Water-works.—Sealed proposals received at office of City Clerk, Breese, Ill., until 2 P. M. June 10 (new bids; previous bids rejected) for furnishing material and labor and constructing improvements to water-works system: 2,280 feet of 8-inch, 492 feet of 6-inch

and 6480 feet of 4-inch class B cast-iron pipe, and 1570 feet of 8-inch vitrified clay pipe, all to be furnished and laid; 7400 pounds special castings; five 8-inch and five 6-inch valves, one 4-inch swing check valve, six fire hydrants, two steam pumps of 750,000 gallons daily capacity, all to be furnished and set; 500,000-gallon reinforced concrete reservoir and brick conulating house to be built; plans and specifications on file in offices of City Clerk and of engineer, Fuller-Coulter Company, Chemical Bldg., St. Louis, Mo., and obtainable from engineers on payment of \$2.

Water-works.—City of Doniphan, Mo., receives bids until 8 P. M. June 11 to extend water mains; plans on file with Buell Cable, City Clerk; certified check \$100.

Weaving Machinery.—Southwestern Iron & Metal Co., 211 E. Bond St., Denison, Tex., wants to purchase machine to weave burlap.

Window Frames.—R. C. Lewis, Abilene, Tex., wants prices on metal window frames.

Woodwork.—D. S. Sanford, Milledgeville, Ga., wants prices on woodwork for two-story store and office building.

St., New York, and McCormick Bldg., Chicago. This booklet, "What We Dry," will be mailed on request to the company.

"Reliable Erie" Portable Hoists.

The portable contractors, farmers and builders' hoists, manufactured by the Erie Clutch & Pulley Co., Erie, Pa., are described and illustrated in the folder catalogue issued by that company. These hoists are divided into three types—No. 1 hoist is described as the ideal machine for operating hay forks, for grain hoisting and for general use on the farm, or for light contractors' work. The No. 2 hoist is fitted for contractors and builders, well diggers, pile drivers, and all other work where the requirement is not over 1000 pounds lifting capacity. The No. 3 hoist is designed for heavy work of all kinds, such as pulling cars up inclines into mills, and any heavy work requiring lifting capacity of over 1000 pounds. It is claimed that the simplicity of

operation and few wearing parts make this a durable and efficient hoist, and one that is economical to operate. This folder, which also refers to friction clutches, pulleys, hangers, green bone cutters, shell, grain and dry bone mills, will be sent on request to the company.

Van Duzen, Royce & Co.'s Poster.

The line of gas and gasoline engines, rural water-works systems, friction clutch pulleys, drum hoists, washing machines, etc., manufactured by Van Duzen, Royce & Co., Columbus, O., are shown on a large poster, illustrated in colors, and designed by the company with the idea of assisting the dealer in his sales campaign. The company will furnish these posters to any dealer carrying its line of machinery. They can then be mailed to prospective purchasers, and it is stated that good results follow. The company's catalogue and discount sheet will be furnished to interested persons on request.

MOTOR VEHICLES AND TRACTORS.

Taxis in Atlanta.

Taxis are taking the place of horse-drawn vehicles in Atlanta, Ga., since the Atlanta Cab & Baggage Co. has installed ten of these vehicles. This company had previously depended entirely upon horse-drawn cabs, but is planning to add to its present installation of taxis as they may be found necessary.

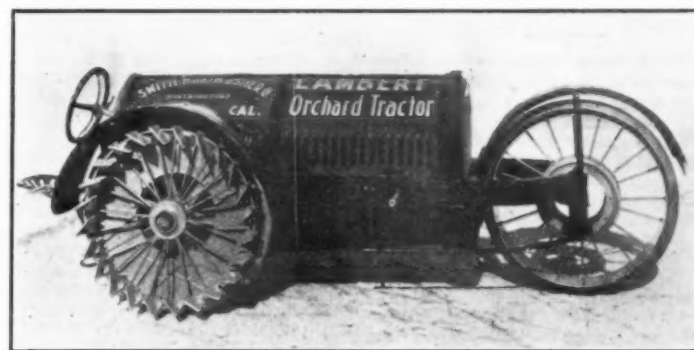
Motor Delivery for Mail.

In addition to the use of motor trucks for handling mail in connection with the large postoffices in the country, such as Washington and New York, the Postoffice Department has authorized the use of motor cars in making deliveries and collections of mail in New Orleans. A number of trucks will be installed for handling mail to and from stations and docks of the city.

"Packers" Motor Trucks.

The business men of Huntington, W. Va., have been quick to realize the fact that commercial motor cars are rapidly supplanting horse-drawn vehicles in the delivery of merchandise, as is evidenced by the number of motor trucks that are being used in that city and the additions which are being constantly made to its motor-truck fleet. Among these trucks the "Packers," manufactured by the Packers Motor Truck Co. of Wheeling, takes an important place. These trucks are made in various sizes, and the company is

ments of such a machine are that it be built low, so as to work right under the trees; that it make short turns, and that it should have ample traction with the drive wheels and a great variety of speed ratios to meet the various speed conditions both in the orchard and when on the road hauling fruit to the packing-house or to market. The Lambert orchard tractor shown in the accompanying illustration has been designed to meet all of these requirements. It is but 42 inches high, and can be turned in a short circle because of its three-wheeled design. The rear wheels are built for ample traction and are self-cleaning. The wheels are also fitted with rubber tires, so that on ordinary roads the cleats on the wheels are automatically eliminated, and in the orchard, where soft ground is encountered, they automatically come into action. J. W. Lambert, whose name has become well known in connection with the Lambert friction-driven automobiles and motor trucks, has spent almost 25 years in gasoline-engine work. For 12 years he has been engaged in the manufacture of these vehicles, and his experience has been valuable in the production of this successful orchard tractor. With the Lambert friction system of transmission it is possible to plow at a rate of 1½ to 2 miles an hour, and for hauling loaded wagons to the packing-house a speed of 6 miles is obtained. Traveling light, 8 or 10 miles an hour may be obtained. These variable speeds



LAMBERT ORCHARD TRACTOR.

represented by H. E. Love as local agent for Huntington. He uses a three-ton truck for demonstration purposes. This truck is constructed so that it will stand the strain on the motor-clutch transmission and frame to which the rough hill country and poor roads sometimes subject them.

Herreshoff Cars in the Southwest.

The Herreshoff Motor Car Co. of Detroit has established a Southwestern branch at 915 Main St., Houston, Tex. This will be the distributing point for Texas, Southern Oklahoma and Northern Louisiana. The Herreshoff cars are designed and built under the supervision of Charles Frederick Herreshoff, of the family famed for yacht and motorboat construction. A large shipment of touring cars and other types has been sent for distribution from the Houston branch. G. P. Davidson will have charge of the sales, and Lee Bender is secretary and treasurer of the Houston office.

The Lambert Orchard Tractor.

There has been an increasing demand, wherever orchards are cultivated scientifically, for a successful machine to do the work that is now done laboriously by hand or by the use of horses and mules. The require-

are made possible by the use of the Lambert system, which eliminates complicated mechanism. In case it is desired to operate other machinery it can be done by simply placing a belt on the pulley that is included with this machine and proceed with the work. This pulley may be operated at any speed desired. The tractor is steered and controlled similarly to an automobile. It is manufactured by the Buckeye Manufacturing Co., Anderson, Ind. The combined experience of the designers and manufacturers of these tractors in manufacturing stationary engines, automobiles and commercial vehicles has given them an insight into the production of a successful machine for this work which should give confidence to prospective purchasers. The motive power is provided by a 40-horse-power four-cylinder vertical engine. Every moving part is enclosed from dust and grit. Ignition is by means of a low-tension magneto.

Motor Fire Apparatus in Panama.

The two motor fire engines purchased from the Webb Motor Fire Apparatus Co. of St. Louis for the Ancon and Cristobal fire stations were recently received in Panama by the Panama Canal authorities. It is stated in the Canal Record that both machines have

INDUSTRIAL NEWS OF INTEREST

Contractors' Machinery Supplies.

Complete lines of contractors' machinery and supplies, also miners' equipment and sawmill machinery, railway and railroad equipment, are carried by the Contractors' Machinery & Supply Co., Steuben and Carson Sts., West End, Pittsburgh, Pa.

Talc Crayons and Powdered Talc.

The management of the Georgia Talc Co., Asheville, N. C., wants to correspond with tale and soapstone consumers and dealers, especially with users of crayons and pencils and tale foundry facing. This company manufactures talc, crayons and powdered talc at Asheville. Correspondence addressed to J. Frazier Glenn, secretary-treasurer of the company, will receive prompt attention.

Manufacturing Taylor Truck.

A plant for the manufacture of the tobacco, cotton and corn truck patented by James W. Taylor of Newbern, N. C., has recently been fully equipped at that place. The Taylor Truck Co., which manufactures the truck, is now in position to handle orders promptly, and will give attention to all communications regarding this truck. Mr. Taylor desires to sell the patent rights in territory in the United States which is out of reach of this Newbern plant. Full information regarding this may be obtained by addressing the Taylor Truck Co.

Ice-Cream Machinery.

The machinery installation of the Maryland Ice-Cream & Fruit Products Co., 17 E. Pratt St., Baltimore, was made by the Schantz Company, 72 Trinity Pl., New York. This company is also making installations for the Hendler Ice-Cream Co., 7 Lloyd St., Baltimore, and the Pikesville Dairy Co., 1501 Argyle Ave., Baltimore. This company makes a specialty of installations for ice-cream-making machinery, ice and refrigerating equipment. This machinery is easily adapted to plants in which power is already supplied for other manufacturing purposes, and in many cases makes a valuable auxiliary to the regular manufacturing plant, such as cotton-oil mills, etc.

Novo Engine Co.'s Jacksonville Branch.

In its extension of the distribution of Novo engines and Novo hoisting and pumping outfits into the South the Novo Engine Co. of 223 Willow St., Lansing, Mich., is represented in Jacksonville, Fla., by J. P. Campbell, agent for Southern Georgia and Florida. This Novo equipment has been designed to enable contractors to cut down their power cost to the minimum. The Novo engine is simple, reliable and readily portable, and self-contained. It is made in eight sizes, from 1 to 10 horse-power. It is also built in connection with Novo hoisting outfits and Novo pumping outfits. Persons interested in such equipment or in gasoline engines will receive prompt attention on communicating with Mr. Campbell or the company.

Relaying Rails for a Houston Company.

The National Iron & Steel Co. of Houston, Tex., through vice-president and general manager I. H. Cohn, has purchased from the Missouri Pacific Railroad, St. Louis, 150 miles of relaying rails, most of which are being shipped into the Southwest to be used in the construction of small lines, industrial tracks and interurban railroads. This company has also placed with Eastern mills in the last 30

days orders for 20,000 kegs of new track spikes and several thousand kegs of track bolts; also 75,000 pairs of new angle bars. These orders went to the Jones & Laughlin Steel Co., Pittsburgh; Republic Iron & Steel Co. of Youngstown, O., and the Lebanon Mills at Lebanon, Pa. Another order for 5000 kegs of spikes went to the Colorado Fuel & Iron Co. of Denver.

Southern Cotton Protecting Association.

The Southern Cotton Protecting Association has been organized under the laws of Oklahoma, and has patent rights issued by the Patent Office in 1907 to H. V. Haley and Richard A. Woodbridge, which cover methods for protecting cotton in bales, both compressed and uncompressed, against flash fires and country damage. The process includes dipping the bales in a solution, the ingredients of which may be had by application to President C. B. Haley of the Association at Oklahoma City. H. V. Haley states that it is his belief that a system of warehouses located throughout the cotton-growing States is the best solution for handling the cotton crop on a satisfactory basis to the planters, the shippers and the manufacturers. He has taken out patents for warehouse, with which he states the Southern Cotton Protecting Association proposes to take any and all cotton tendered to it for treatment and storage for as long a time as the producer or buyer wishes to leave it in the care of the Association, and at an attractive rate for such storage.

Gas Engines for Drainage Company.

The importance of drainage installations in the South has created a demand for efficient and economical machinery and methods of producing practical and reliable results promptly. In this connection a recent contract made by the Irwin D. Groak Engineering Co., mechanical and consulting engineers, Monadnock Bldg., Chicago, is particularly interesting. It is for the installation of a pumping plant at New Orleans, and was secured from the New Orleans Netherlands Co., of which Cornelius J. Ton is president. This installation is notable for the fact that the engines are to be run by gasoline, kerosene or distillate, direct connected to centrifugal pumps for drainage purposes. The pumps will be of the American Well Works make, of Aurora, Ill., and the engines made by the Seager Engine Works of New Orleans, of the "Olds" type "G" internal combustion design. The specifications were drawn by the Allen Engineering Co. of Chicago. The plant will consist of five 50-horse-power engines, four 30-inch pumps with capacity of 39,000,000 gallons each per 24 hours, one 20-inch pump of capacity of 26,000,000 gallons per 24 hours against a head of three feet, one five-kilowatt generator to furnish electric light for the plant and for other purposes. The building, which is already under construction, is of hollow tile. The installation will be of sufficient capacity to drain the land rapidly, and the starting of the engines can be done very quickly when the necessity arises.

TRADE LITERATURE.

Ruggles-Coles Dryer Installations.

The reasons why various materials are dried and the economy of the use of Ruggles-Coles dryers are stated in an illustrated booklet on dryers recently published by the Ruggles-Coles Engineering Co. of 50 Church

been subjected to the prescribed tests under the direction of the mechanical engineer and the chief of the Canal Zone Fire Department. On a test run one of the engines covered a distance of 7.9 miles in 25 minutes where many sharp turns and heavy grades were encountered. The engines are of the six-cylinder type, 80 horse-power, and must be able to run 50 miles an hour on level roads and 20 miles an hour up a 12 per cent. grade. The pumps have shown a capacity of 690 gallons of water per minute through two 300-foot lines of hose with 1½-inch nozzles attached. The engine will carry 1200 feet of hose when fully equipped, and is supplied with roof ladder, extension ladder and two three-gallon fire extinguishers. The position of motor engineer in the Canal Zone Fire Department has been filled by the appointment of the engineer who was sent by the manufacturers to place these machines in service. Requisition was made some time ago by the Canal Commission, Washington, D. C., for the purchase of a motor tractor and a supplementary pair of wheels with transmission axle, to be substituted for horses in drawing the No. 3 Silsby fire engine at the Cristobal station. The bids received failed to provide an economical machine that met all the requirements, and they were rejected. Further consideration of the purchase of a motor tractor for this purpose will depend on whether or not suitable apparatus can be found.

Motor Ash Wagon with Loading Device.

Among the large variety of bodies made for motor vehicles by the Autocar Co., Ardmore, Pa., is the end-dumping ash wagon, one of which was made for the use of the Massachusetts Institute of Technology, Boston. In this wagon the chassis carries a load of 3000 pounds, or about two cubic yards of ashes. In dumping, the forward end of the wagon is elevated by a chain belt operated by a hand-crank wheel. The loading device attached to this body consists of a light crane with block and fall. A large ash barrel which would require great difficulty in being handled by two men, is easily hoisted and emptied into this wagon by means of the crane. The frame of the body is built of pressed steel channel bars reinforced with hickory. The driver's seat is located over the motor so as to give a maximum body platform with a minimum wheel base. A speed governor limits the speed to any desired point up to a maximum of 20 miles an hour. Information regarding this type of car and the many others manufactured by the Autocar Co. may be obtained on request to the company.

Land Values Increased by Automobiles

The advent of the active season in real estate sales, particularly of suburban and country lands, directs attention to the great benefits of the use of motor vehicles and of the increases in values which are in part due to the general use of this mode of travel. The influence of motor vehicles, both gasoline and electric, is as far-reaching in suburban property as municipal improvements are to land values in cities. Since the assessed valuation of taxable property is the basis of revenue in incorporated cities and villages, the automobile carries real money into the town treasury. It increases the value of outlying regions beyond all proportion to their former figures. One ride into the open is enough to convince any observer that the motor car is a vehicle of utility in civic and rural betterment as well as in the transportation of persons and merchandise. In a trip of 50 miles in almost any direction the tourist will see dozens of fine homesteads, valued only because of the agricultural pursuits which their region permitted, as well as dozens of hilltops which once were regarded only as waste land. It is a pronounced fact that many of these places were making their owners land poor until the automobile appeared and brought them nearer to the village or the city. The hilltop, which a few years ago was looked upon as worth no more than the timber it yielded, or was ignored as farming land because of sharp elevations or other natural characteristics, now cannot be bought for five times the original valuation. The automobile has given such places an exclusive location, has torn down the barrier of altitude, which would wear out a team of horses in reaching them, and has given the owners ideal sites for country residences. The general result is that there is now a steady market for any hilltop or well-located land within a few hours' ride of a large city or a few moments' spin to the nearest township. Indeed many brokers thank the automobile for large commissions earned solely because they were able to prove that the automobile is an ef-

fective vehicle of transportation not only from the station to the country residence, but also from the country estate to the city in which the owner transacts his business. Furthermore, the possession of an automobile by the real estate agent enables him to show in the most convincing manner that the place his client is about to inspect is not far from the railroad station.

Cotton Oil for Bulgaria.

P. D. Trakides & Co., Varna, Bulgaria, write to the MANUFACTURERS RECORD: "We request you to put us in direct communication with cotton oil exporting manufacturers. We are greatly interested in the exportation of these products, and, should it be convenient, we would like to have samples and quotations, with export discount or commission. We are willing to handle these products on commission or buy them for our own account for resale to the trade. We shall pay cash against shipping documents."

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD, Baltimore, Md., June 5.

The Baltimore stock market was rather quiet during the past week. In the trading United Railways common sold from 23¼ to 24¼; do. income bonds, 67½ to 65; do. funding 5s, 89¼ to 90¼; do. notes, 101¼ to 101½; do. 4s, 84¼ to 85; Consolidated Gas, Electric Light & Power preferred, 112¼ to 113¼; do. 4½s, 90 to 89¼; Consolidated Gas 4½s, 97¼; Seaboard Air Line common, 25 to 26¼, with last sale at 25¼; do. preferred, 55¼ to 55; Mt. Vernon-Woodberry Cotton Duck 5s, 75¼ to 75; G. B. S. Brewing common, 4½; do. incomes, 15¼; do. 4s, 50 to 51¼.

Exchange Bank sold at 163¼; Merchants', 184; Fidelity & Deposit, 153; Mercantile Trust, 153; Maryland Casualty, 96; United States Fidelity, 185½.

Other securities were traded in thus: Baltimore City 5s, 1916, 103¼; do. 3½s, 1980, 87½; do. do. 1954, 92¼; do. 4s, 1958, 100½; do. 3½s, 1940, 93½ to 93¼; Houston Oil common, trust certificates, 13 to 12½, with last sale at 12¼; do. preferred, 66 to 66¾, reacting to 66; do. free common stock, 12 to 12¼; do. dividend certificates, 86 to 85; Norfolk & Portsmouth Traction 5s, 89¼ to 89¼; Pennsylvania Water & Power 5s, 90¼; do. common stock, 66¼ to 67; Baltimore Electric 5s, stamped, 99¼ to 99¼; Norfolk Railway & Light 5s, 100¼; Atlanta Consolidated Street Railway 5s, 105; Portland Railway first refunding 5s, 100¼; Coal & Coke Railway 5s, 94½; Augusta & Aiken preferred, 82; International & Great Northern Corporation, 55 to 56; Maryland Electric 5s, 98½ to 98; Atlantic Coast Line of Connecticut 5s, certificates, 103 to 105; Fairmont & Clarksburg Traction 5s, 100¼; Macon Railway & Light 5s, 100¼; Newport News & Old Point 5s, 99¼; Wilmington & Weldon 5s, 110¼; Atlantic Coast Line convertible debenture 4s, 102; Carolina Central 4s, 92½; Atlantic Coast Line Consolidation 4s, 95¼ to 95¼; Virginia Midland 4th, 104¼; Anacostia & Potomac 5s, 100; Georgia Southern & Florida second preferred, 81¼; Consolidation Coal refunding 4½s, 93; do. 5s, 93¾.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended June 5, 1912.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast of Conn.	100	267	270
Georgia S. & Fla. 2d Pfd.	100	82	83
Norfolk Railway & Light	25	27½	28¼
United Ry. & Elec. Co.	50	24	24¼
Virginia R. & P. Co.	100	50	50
Western Maryland	100	58	58
Bank Stocks.			
Bank of Baltimore	100	165	165
Exchange	100	164	164
Farmers & Merchants	40	52	52
First National	100	135	135
German	100	110	110
German-American	100	108	108
Merchants'	100	183½	185
Second National	100	205	205
Union	100	132	135

Trust, Fidelity and Casualty Stocks.

American Bonding	25	75	76¼
Baltimore Trust	100	164½	164½
Fidelity & Deposit	50	151	153
Maryland Trust	100	110	110
Maryland Trust Pfd.	100	118	118
Maryland Casualty	25	96	97
Mercantile Trust & Deposit	50	153	153½
Union Trust	50	65	65
U. S. Fidelity & Guaranty	100	185	186

Miscellaneous Stocks.

Ala. Con. Coal & L. free stock	100	41	41
Ala. Con. Coal & L. Pfd.	100	25	30
Con. Gas, Elec. Lt. & P. Com.	100	116	117
Con. Gas, Elec. Lt. & P. Pfd.	100	112	113¼
Consolidation Coal	100	101½	102
G. B. S. Brewing Co.	100	4½	5
Mer. & Min. Trans. Co., V. T.	100	70	70

Railroad Bonds.

Atlantic Coast 1st 4s.	100	95¼	95¼
Atlantic Coast Conv. Deben. 4s.	100	102¼	102¼
At. Coast (Conn.) 4s, Cfs.	50	102	102
Atlantic Coast (Conn.) 5s, Cfs.	100	105	105
Atlantic Coast new 4s, Cfs.	100	95	95
Atlantic Coast (S. C.) 4s.	100	97½	97½
Atlantic Coast L. & N. Col. Tr. 4s.	100	94½	94½
Balto. & Annapolis S. L. 5s.	100	78	80
Balto. & Harrisburg Ext. 5s.	100	103½	103½
Carolina Central 4s.	100	93	93
Charleston & West. Car. 5s.	100	105	105
Coal & Coke Railway 5s.	100	94½	94½
Coal & Iron Railway 5s.	100	101	101½
Col. & Green. 1st 6s.	100	105¼	105¼
Col. Cent. & Penin. 5s.	100	106¾	107¾
Georgia & Alabama 5s.	100	105½	106
Georgia, Car. & North. 1st 5s.	100	105	105
Georgia Pacific 1st 6s.	100	111½	112½
Macon, Dublin & Savannah 5s.	100	99	101
Maryland & Pennsylvania 4s.	100	88¾	88¾
New Orleans Great Northern 5s.	100	71	71
New Orleans M. & C. 5s.	100	90¾	90¾
Norfolk & Carolina 5s.	100	110	110
Petersburg Class A 5s.	100	106½	106½
Potomac Valley 1st 5s.	100	105	105
Raleigh & Augusta 1st 5s.	100	105	105
Seaboard 4s, Stamped.	100	86¾	86¾
Seaboard Refunding 4s.	100	80¾	81½
Seaboard & Roanoke 5s.	100	105	106
Seaboard & Roanoke 6s.	100	104½	106
Washington Term. 3½s.	100	86¼	88
Western Maryland 4s.	100	86¼	87¼
Wilmington & Weldon 5s.	100	110	112
Washington & Vandemere 4½s.	100	96	96

Street Railway Bonds.

Atlanta Con. Street Railway 5s.	100	105¼	105¼
Augusta Railway & Electric 5s.	100	103	103
Balto. S. P. & C. 4½s.	100	97	97
Baltimore Traction 1st 5s.	100	106½	106½
Baltimore Traction (N. B.) 5s.	100	109¼	110¾
Central Railway (Balto.) Ext. 5s.	100	106	109
Charleston City Railway 5s.	100	103	103
Charleston Con. Electric 5s.	100	95½	95½
City & Suburban 5s (Balto.)	100	103½	103½
City & Suburban 5s (Wash.)	100	103½	104¼
Fairmont & Clarksburg Trac. 5s.	100	109½	109½
Knoxville Railway 1st 5s.	100	104	104
Lawrenceville Railway 1st 5s.	100	94½	94½
Macon Railway & Light 5s.	100	100¾	100¾
Maryland Electric Railways 5s.	100	97½	98¼
Newport News & Old Point 5s.	100	99¼	99¼
Norfolk & Portsmouth Trac. 5s.	100	89¼	89¼
Norfolk Railway & Light 5s.	100	99¾	100¼
Norfolk Street Railway 5s.	100	105	105
United Railways 1st 4s.	100	84¾	85
United Railways Income 4s.	100	64¾	65¼
United Railways Funding 5s.	100	89¾	89¾
United Railways Notes	100	101	101¼
Virginia R. & P. 5s.	100	95¾	96

Miscellaneous Bonds.

Ala. Con. Coal & Iron 5s.	73	80
Ala. Con. Coal & Iron 5s.	72	80
Baltimore Electric 5s, Stp.	98¼	99¼
Consolidated Gas 5s.	108	108¾
Consolidated Gas 4½s.	97¾	98
Con. Gas, Elec. Lt. & P. 4½s.	89¼	90
Consolidation Coal 4½s.	101½	101½
Consolidation Coal Refd. 4½s.	91	92½
Consolidation Coal Refd. 5s.	93	93¾
Fairmont Coal 1st 5s.	95	97
G. B. S. Brewing 1st 4s.	51	53
G. B. S. Brewing Income 5s.	15	16
Jamison Coal & Coke 5s.	92¼	92¼
Mt. Vernon-Woodby Cot. Duck 5s.	75	75¼
United Elec. Lt. & P. 4½s.	94	94½

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending June 3.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	75	75
Aiken Mfg. Co. (S. C.)	55	55
American Spinning Co. (S. C.)	102	102
Anderson Cotton Mills (S. C.)	100	100
Anderson Cot. Mills (S. C.) Pfd.	100	100
Arcadia Mills (S. C.)	90	90
Arkwright Cotton Mills (S. C.)	99	100
Belton Mills (S. C.)	100	110
Brandon Mills (S. C.)	90	90
Brogan Mills (S. C.)	60	60
Chiquola Mfg. Co. (S. C.)	160	160
Clifton Mfg. Co. (S. C.) Pfd.	97	97
Clinton Cotton Mills (S. C.)	120	120
Conway Mfg. Co. (S. C.)	99	99
D. E. Converse Co. (S. C.)	75	75
Drayton Mills (S. C.)	90	90
Eagle & Phenix Mills (Ga.)	106	106
Easley Cotton Mills (S. C.)	162	175
Enoree Mfg. Co. (S. C.)	25	62
Enoree Mfg. Co. (S. C.) Pfd.	85	100
Gaffney Mfg. Co. (S. C.)	72	75
Gainesville Cotton Mills (Ga.)	72	80
Glenwood Cotton Mills (S. C.)	120	140
Graniteville Mfg. Co. (S. C.)	135	145
Greenwood Cotton Mills (S. C.)	57	60
Grendel Mills (S. C.)	90	100
Hartsville Cotton Mill (S. C.)	160	160
Henrietta Mills (N. C.)	160	175
Inman Mills (S. C.)	100	100
Kinz Mfg. Co., J. P. (Ga.)	80	85
Lancaster Cotton Mills (S. C.)	130	130
Lancaster Cot. Mills (S. C.) Pfd.	97	100
Lancaster Mfg. Co. (S. C.)	75	75
Laurens Mills (S. C.)	125	125
Limestone Mills (S. C.)	155	160
Lockhart Mills (S. C.)	60	60
Lockhart Mills (S. C.) Pfd.	90	100
Loray Cotton Mills (N. C.) Pfd.	95	95
Marlboro Cotton Mills (S. C.)	75	75
Mills Mfg. Co. (S. C.)	90	102
Molokoh Mfg. Co. (S. C.)	90	90
Monaghan Mills (S. C.)	105	105
Monarch Cotton Mills (S. C.)	110	110
Newberry Cotton Mills (S. C.)	125	130
Ninety-Six Cotton Mill (S. C.)	130	150

Norris Cotton Mills (S. C.)	115
Orr Cotton Mills (S. C.)	90
Pacolet Mfg. Co. (S. C.)	72
Pacolet Mfg. Co. (S. C.) Pfd.	90
Parker Common	20
Parker Pfd.	40
Pelzer Mfg. Co. (S. C.)	120
Poe Mfg. Co., F. W. (S. C.)	110
Saxon Mills (S. C.)	130
Spartan Mills (S. C.)	110
Trion Mfg. Co. (Ga.)	130
Tuconau Mills (S. C.)	300
Union-Buffalo (S. C.) 1st Pfd.	15
Union-Buffalo (S. C.) 2d Pfd.	15
Victor Mfg. Co. (S. C.)	110
Warren Mfg. Co. (S. C.)	80
Warren Mfg. Co. (S. C.) Pfd.	100
Washington Mills (Va.)	28
Washington Mills (Va.) Pfd.	106
Whitney Mfg. Co. (S. C.)	110
Wiscasset Mills (N. C.)	110
Woodruff Cotton Mills (S. C.)	110
Woodside Cotton Mills (S. C.)	130
Watts Mills (S. C.)	70
Williamston Mills (S. C.)	120

Manual of Statistics.

Many important changes in connection with corporations have taken place in the past year. These matters are fully covered in the 1912 edition of the Manual of Statistics, which is the thirty-fourth annual issue of that standard publication. It adequately presents the organization, finances and position of all the leading railroad and industrial companies in the United States and Canada, with details of the numerous new stock and bond issues of such organizations.

The inclusion of accounts of the new companies which originated from the disintegration of the Tobacco and Standard Oil Trusts is a feature of considerable interest and utility. At the same time it embodies ample information regarding Government securities, mining stocks and the grain and cotton statistics. Its utility is increased by an arrangement rendering references to the different sections easy and satisfactory. It presents throughout evidence of accuracy and careful compilation in its descriptive and statistical details, making the volume one which investors and all who are interested in the financial and other markets of the country will heartily welcome. It is published by the Manual of Statistics Company, 20 Vesey street, New York.

FINANCIAL CORPORATIONS.

Ala., Grand Bay.—The Grand Bay State Bank, capital \$10,000, is reported incorporated by R. L. Fletcher, F. L. Freeland, M. A. Forte, John W. Egan of Grand Bay, John T. O'Guynn, H. B. Davidson, L. B. Freeland of Mobile, William Townsend, W. L. Abernathy and J. M. Davidson of Flomaton; officers, M. A. Forte, president; John W. Egan, secretary; R. L. Fletcher, treasurer.

Ark., Elkins.—The Bank of Elkins is reported to have filed articles of incorporation; capital \$20,000. Officers: R. D. Stokenburg, president; C. E. Swift, vice-president; L. J. H. Smith, secretary and treasurer.

Fla., Fellsmere.—Reports state that a new bank is being organized by Messrs. Vans Agnew and Donagan.

Fla., Stuart.—Official: The Bank of Stuart has filed application for a charter; capital \$15,000; directors, Walter Kitching, president; C. C. Chillingworth, vice-president; George W. Parks, H. C. Ferree, John T. Wisdom and Stanley Kitching. Business is expected to begin within 30 days.

Ga., Rome.—An official letter confirms report that a new bank capitalized at \$100,000 is to be established at Broad and Fifth Ave. Organization not yet completed. Stock has been subscribed and operations are to begin January, 1913.

Ga., Jackson.—Official: The First Farmers' Bank of Jackson chartered; capital \$50,000. Directors: L. O. Benton, president, Monticello; J. A. Jarrell and G. P. Saunders, vice-presidents, Jackson; J. B. Carmichael, cashier; J. C. Jones, C. B. Biles, F. M. Maddox, J. M. Ball, S. O. Ham, J. A. King, R. E. Evans and Thos. P. Bell. Business is expected to begin between June 15 and July 1.

Ga., Savannah.—Official: The Southern Investment Co. incorporated; capital \$100,000, with privilege of increasing to \$300,000; directors, F. W. Clarke, president; J. W. Daniel, vice-president; J. R. Cain, secretary; I. C. Helmly, R. W. Farr and L. D. Wylly. Business is to begin at once.

[For Additional Financial News, See Pages 96 and 97.]

Established 1835
The Merchants National Bank
 South and Water Sts., BALTIMORE, MD.
 DOUGLAS H. THOMAS, President.
 WM. INGLE, Vice-Pres. and Cashier.
 J. C. WANDS, Asst. Cashier.
 JOHN B. H. DUNN, Asst. Cashier.
 Capital \$1,500,000
 Surplus and Profits - \$900,000
 Deposits \$12,000,000
 Accounts of Banks, Bankers, Corporations
 and Individuals solicited. We invite corre-
 spondence.

THE FIRST NATIONAL BANK
 OF KEY WEST, FLA.
 United States Depository and Disbursing
 Agent.
 Capital - \$100,000
 Surplus and Undivided Profits - \$40,000
 A general banking business transacted.
 Special attention given to collections.

INVESTMENT SECURITIES
 Southern Stocks and Bonds
 Municipal and Corporation
 Cotton Mill Stock a Specialty
 WM. S. GLENN, Broker - SPARTANBURG, S. C.

JOHN NUVEEN & CO.
 1st Nat. Bank Bldg., CHICAGO
 We purchase SCHOOL, COUNTY and MU-
 NICIPAL BONDS. Southern Municipal
 Bonds a Specialty.
 Write us if you have bonds for sale.

Delaware Trust Company
 WILMINGTON, DELAWARE
 INCORPORATING under broad, liberal, safe
 and stable Delaware laws. A fully equipped
 department for proper organization and re-
 gistration of corporations.
 BANKING AND TRUST department gives
 special attention to out of town customers' accounts.
 TITLE DEPARTMENT examines and guaran-
 tees title to realty throughout Delaware.
 REALTY DEPARTMENT has sites for manu-
 facturing industries. Modern Methods of
 management of property.
 EDWARD T. CANBY, President.
 J. ERNEST SMITH, V.-Pres. and Gen. Council.
 WM. G. TAYLOR, Treasurer.
 HARRY W. DAVIS, Secretary.
 W.W. PUSEY, 2d Title and Real Estate Officer.

H. B. Wilcox, President. Blanchard Randall, V.-Pres.
 Wm. S. Hammond, Cashier
 Saml. W. Tschudi, A. Cash. R. E. Bolling, A. Cash.
The First National Bank
 17 South St., Baltimore, Md.
 Capital - \$1,000,000
 Surplus and Net Profits - 400,000
 Deposits - 6,500,000
 Especially well equipped to handle the business
 of Southern Banks, Corporations, and In-
 dividuals and Manufacturers. We cordially in-
 vite correspondence and interviews.

The National Exchange Bank
 OF BALTIMORE, MD.
 Hopkins Place, German and Liberty Sts.
 Capital, \$1,000,000
 July 15, 1908, Surplus and Profits, \$671,631.60
 OFFICERS:
 WALDO NEWCOMER, President.
 SUMMERFIELD BALDWIN, Vice-Pres.
 R. VINTON LANSDALE, Cashier.
 C. H. MORGAN, Asst. Cashier.
 Accounts of Mercantile Firms, Corporations,
 Banks, Bankers and Individuals invited.

SURETY BONDS
Fidelity & Deposit Co.
 OF MARYLAND
 Home Office, - BALTIMORE, MD.
 Total Assets Dec. 31, 1911, \$8,133,000.57
 Pioneer Surety Co. of the South.
 Becomes Surety on bonds of every de-
 scription.

AGENTS IN ALL PRINCIPAL CITIES
 HARRY NICODEMUS, EDWIN WARFIELD,
 Sec'y and Treas. President
Southern Steam
Railroad Securities
 DEALT IN
F. J. LISMAN & CO.
 Specialists in Steam R. R. Securities
 Members New York Stock Exchange
 30 Broad Street NEW YORK
 39 Pearl Street, Hartford
 Land Title & Trust Bldg., Philadelphia

CAPITAL AND SURPLUS - \$3,500,000
THE BALTIMORE TRUST CO.
 BALTIMORE, MD.
 Solicits Accounts of Banks, Bankers, Corporations and Individuals.
 Interest Allowed on Deposits Subject to Check.
 Special Rates Made on Time Deposits.
 OFFICERS
 DOUGLAS H. GORDON, President CHAS. D. FENHAGEN, Vice-Pres.
 GEORGE C. MORRISON, Vice-Pres. EDWIN W. POE, Sec.-Treas.

BUSINESS ANALYSTS
INVESTIGATORS
SYSTEMATIZERS
YOUR BUSINESS SOLICITED
P. W. ROBERTSON, President
 Certified Public Accountant.
 Fellow Institute of Accounts, New York.
 Fellow Va. Society of Public Accountants.

WE BUY City, County, School and Drainage BONDS
 FROM MUNICIPALITIES OR CONTRACTORS
 We are in position to pay HIGHEST PRICES. Write or wire us your offerings.
THE NEW FIRST NATIONAL BANK, Assets, \$5,000,000 Columbus, Ohio

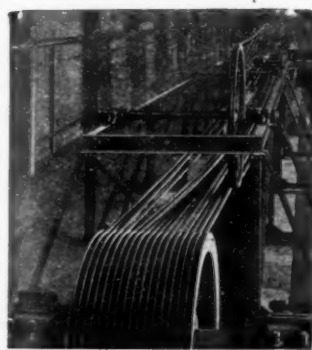
BONDS
 BOUGHT AND SOLD
 Approved Securities Offered
 Are you on our mailing list?
 BOND DEPARTMENT
 The Fifth-Third National Bank
 CINCINNATI, OHIO

Southern Investment Securities
 Timber, Coal and Mineral Lands
 J. H. C. BARR
 Land Title Building Philadelphia, Pa.

CHARLES L. HEHL, C. P. A., President ELMER L. HATTER, C. P. A., Treasurer
 JOHN KÜCHLER, C. P. A., Vice-President ERNEST E. WOODEN, C. P. A., Secretary
BALTIMORE AUDIT COMPANY
 1027-1033 Calvert Building BALTIMORE, MD.
 BRANCH—Monticello Arcade Building, Norfolk, Va.

Municipal Bonds Purchased
 Correspondence invited from Investors wishing to
 sell their holdings of seasoned marketable Municipal
 Bonds, and from municipal officials and contractors
 in connection with entire new issues.
N. W. HALSEY & CO.
 49 Wall Street, New York
 PHILADELPHIA CHICAGO SAN FRANCISCO

RESOURCES - \$14,975,352.57
 DEPOSITS DEC. 31, 1909.....\$ 8,041,252.59
 DEPOSITS DEC. 31, 1910..... 8,809,843.00
 DEPOSITS DEC. 31, 1911..... 10,344,570.57
 This growth indicates that we have the ability and disposition to give GOOD
 TRUST COMPANY SERVICE. We can prove it—to your advantage.
 ALLOWS INTEREST on daily balances of \$500 or over, subject to check,
 and special rates for time deposits.
 ACTS AS TRUSTEE under mortgage, Registrar and Transfer Agent of
 Stocks and Bonds of Corporations.
 Securities held on deposit for out-of-town corporations and individuals.
 Acts as Financial Agent for Municipalities and Corporations.
MERCANTILE TRUST & DEPOSIT COMPANY
 OF BALTIMORE
 CAPITAL - \$1,500,000.00 SURPLUS - \$3,000,000.00



Cut Down Transmission Expense

Do Away With Belts
and Pulleys. Put in
"American" Rope
Drives.

"American" Rope Transmission saves money right from
the very beginning. It costs from 15% to 50% less at the
start. This first cost is the last cost. No external dressing
needed. No frequent tightening required.

"American" Rope Drives occupy a small space. They
grip tighter, so transmit more horsepower. Supporting
bearings can be placed closer together. No loss of time by
breakdowns.

They run to every floor from main driving pulley, any
distance—any direction. Exact shaft alignment unneces-
sary.

New Factories largely use "American" Transmission.
Investigate it—write us. Our engineers will show you
where "American" Rope Drives will put money in your
pocket—and keep it there. They will cheerfully submit
you plans and estimates.

American Manufacturing Co.

Makers of "AMERICAN" Transmission Rope

Noble and West Sts.

Brooklyn, N. Y. C.

Ky., Frankfort.—The American Bank & Trust Co. will, it is reported, soon begin business; capital \$100,000.

La., Lake Charles.—Reported chartered: Southwest Louisiana Land & Mortgage Co., capital \$500,000; C. B. Richards, president; E. C. French, vice-president; E. J. Sullivan, Jr., secretary; D. C. Powell, treasurer, and Paul O. Moss, J. A. Landry, John L. Wasey and Dr. S. M. Lyons, directors.

Md., Baltimore.—Official: The Parr & Parr-Harvey Company incorporated; capital \$25,000; incorporators, Israel M. Parr, Jr., president; Joshua G. Harvey, first vice-president; R. P. O'Loane, second vice-president; Philip W. Harvey, secretary, and Henry A. Parr, Jr., treasurer. Business began June 1 at 212 and 219 E. German St. The purpose of the company is to engage in all forms of insurance brokerage business.

Md., Baltimore.—The Commercial Credit Co., capital \$300,000, has perfected plans for incorporation. Directors: A. E. Duncan, president; John S. Gibbs, chairman of the executive committee of the Citizens' National Bank; Henry F. Baker of Robert Garrett & Sons, bankers; Sylvan H. Lauchheimer, attorney; Thomas H. Gaither, Jr.; George Weems Williams of Marbury, Gosnell & Williams, attorneys; R. Walter Graham of Meyer, Pitts & Co.; James C. Fenhagen of Robert Garrett & Sons, bankers. The company will make a specialty of purchasing accounts of well-rated manufacturers throughout the country.

Mo., Halltown.—The Bank of Halltown is reported chartered; capital \$10,000. Directors: J. P. McDorman, N. McCoy, H. S. Fischer, C. P. Cantrel and M. J. Clark.

Mo., Hume.—The Hume State Bank, capital \$10,000, is reported chartered. Directors: R. M. Duncan, J. T. Lee, J. S. Franklin, Wm. Thompson and J. C. Booth.

N. C., Charlotte.—An official letter says that the Realty Trust Co., recently organized by W. C. Wilkinson and associates with an authorized capital of \$125,000, will deal only in real estate.

N. C., Norlina.—R. T. Watson writes that he and others "have secured a charter for Bank of Norlina, but have decided not to open; or, if at all, it will be some time off."

N. C., Scotland Neck.—Official: The Home Building and Loan Association chartered; directors, G. Hoffman, N. B. Josie, O. J. Moore, Stuart H. Smith, F. P. Shields, Claude Kitchen, H. McDowell. Business is about to begin.

N. C., Weldon.—The Weldon Bank & Trust Co., authorized capital \$100,000, is reported organized by S. F. Patterson, Roanoke Rapids; F. J. Bounds, W. H. S. Burgwyn, J. T. Gooch, Henderson, and W. S. Parker, Henderson.

Okla., Marlow.—Reported chartered: National Bank of Marlow; capital \$25,000. W. A. Wade is president and T. L. Wade cashier. This is a conversion of the Bank of Marlow.

Okla., Stigler.—Official: The Haskell County Abstract Co. incorporated; capital \$5,000; organizers, Fred Cotton, Guy A. Curry and M. Pyle. Business began May 1.

S. C., Anderson.—The Realty Trust Co., recently commissioned with \$20,000 capital, has elected directors thus: J. E. Clinkscales, president; H. A. Orr, vice-president, and W. D. McLean, secretary and treasurer; A. Carl Lee, W. W. Sullivan, B. F. Mauldin, H. C. Townsend, G. H. Bales, R. J. Mebane and J. D. Hammett.

S. C., Charleston.—An official letter says that the Cornhill Terrace Co. is chartered to do a general real estate business and not a banking business as previously reported. A. R. Rughelmer is president.

S. C., Columbia.—The Guaranty Trust Co. of South Carolina is reported organized with W. S. Reamer president, T. H. Meighan first vice-president, T. M. Phifer second vice-president and treasurer, and J. Waties Thomas secretary; directors, W. S. Reamer, W. W. Ball, J. L. Minnaugh, M. C. Heath, T. H. Meighan, G. T. Pressley, Dr. Le Grand Guerry, T. M. Phifer, F. G. Tompkins, John P. Thomas, Jr., J. P. Matthews, J. Waties Thomas of Columbia, S. C., and LeRoy Springs of Lancaster. Temporary offices are in the Clark Law Bldg.

S. C., Fairfax.—Official: The Bank of Fairfax chartered; capital \$20,000; H. M. Harvey, president; Miles Loodholh, vice-president; directors, N. B. Loodholh, Laurens Youmans, W. C. Manuel, M. C. Dowling, J. H. Hewlett, J. T. Wilson and W. E. Harter. Business began May 21.

S. C., Lena.—The Bank of Lena is reported to have been granted a commission; capital \$15,000; petitioners, Hugh E. Vincent, B. J. Peoples, D. E. Wyman and S. R. Stoney.

Tenn., Memphis.—The Citizens' Bank & Trust Co., capital \$250,000, is reported to have filed application for a charter; organizers, J. H. Creath, William Pritchard, W. R. Cross, M. E. McLaughlin, W. H. Reid and Percy Finlay.

Tenn., Nashville.—The Bankers' Investment Co. is reported to have filed its charter; capital \$10,000; incorporators, F. W. Carr, Marvin P. Prayer, K. H. Dodson, Robert C. Connell and W. J. Allen.

Tex., Bishop.—The First State Bank of Bishop, capital \$25,000, surplus \$10,000, will, it is reported, begin business June 15. Directors: J. H. Herron, Bishop, president; J. Hirsch, vice-president; Bert E. Kinder, formerly of Gregory, cashier; J. A. Harrell, Robert Driscoll, Jr.

Tex., Cleveland.—A new bank is reported being organized with directors thus: F. B. Henderson, T. A. Boothe, D. T. Morris, A. V. Cruse, Noble Garvey, Clopton Miles and H. B. Whitmire.

Tex., El Paso.—Official: Texas Bank & Trust Co. incorporated; capital \$100,000; Lee H. Orndorff, president; H. P. Jackson and Cyrus H. Jones, vice-presidents; Frank M. Murchison, cashier and manager. Business is to begin June 1.

Tex., San Antonio.—The Continental Investment Co., incorporated with authorized capital of \$10,000,000, has opened offices in the Gunter Office Bldg. D. B. Chapin is president and general manager.

Va., Dillwyn.—Official: The Merchants and Planters' Bank chartered and incorporated; capital \$10,000 to \$25,000; directors, James L. Anderson, president; J. B. Hanes, vice-president; A. W. Carter, cashier; J. H. Lewis, B. F. Nuckols, Sands Gayle, W. H. Spencer, W. R. Connor and T. B. Pearson. Business is expected to begin June 10.

Va., Portsmouth.—The Gibraltar Home Loan & Investment Co. of Norfolk county is reported to have been granted a commission; capital \$5000 to \$50,000. Incorporators, W. F. McGlone, president; John Reese, vice-president, and J. T. P. Cross, secretary and treasurer.

Va., Roanoke.—The Merchants' National Bank has made application to organize; capital \$100,000; organizers, Geo. H. P. Cole, correspondent, Roanoke, Va.; J. W. Penn, C. E. Holcomb, A. L. Hughson and A. A. Connolly.

W. Va., Huntington.—The Sure Insurance Co. of Huntington is reported chartered; incorporators, G. W. Miller, League; Clyde Wigner, W. F. Arnold of Ellenboro; W. R. Cunningham, Cantwell; W. R. Hays, B. A. Newton, McFarlan; A. E. Lamp, Beatrice; Minnie W. Hoff, Silas W. Hoff, Harrisville; F. A. Waggoner, Berea; Fred A. Hall, Pullman; A. J. Jackson, Washburn; W. H. Stewart, Cairo; Michael Naughton, Cornwalls; J. M. Hall, Neil Collins, W. R. Mervie, W. W. Smith, Kenova; J. H. Reynolds, Milton; S. G. Carter, W. S. Bowles, E. L. Hollandsworth, J. C. Shaft, F. L. Foster, J. J. Miller, J. Bonar, Milton; W. H. Stovasser, C. A. Love, Barboursville; W. E. Lowther, Harrisville.

NEW SECURITIES.

Ala., Birmingham.—Press dispatches state that the question of issuing \$5,000,000 of bonds for water-works system is under consideration.

Ala., Florence.—Official: Defeated: Lauderdale county road bonds. C. W. Young is Clerk.

Ala., Hartselle.—Official: June 24 an election is to be held to vote on \$15,000 of 6 per cent. 10-year school-building bonds; denomination \$500; J. R. Samples, P. Patello and J. L. Day, Commissioners.

Ark., Fort Smith.—Bids will be received until noon June 15 for \$45,000 of 5 per cent. bonds of Paving District No. 7. Roy M. Johnston is secretary Board of Improvement of Paving District No. 7.

Ark., Osceola.—The Harris Trust & Savings Bank and the Wm. R. Compton Company are reported to have purchased \$1,250,000 of 5½ per cent. bonds of Grassy Lake and Tyrone Drainage District, Mississippi county.

Fla., Brooksville.—Coffin & Co., Chicago, are reported to have been awarded \$12,000 of 6 per cent. paving bonds.

Ga., Fitzgerald.—Official: Bids will be opened on July 1 for \$40,000 of 30-year paving bonds voted May 14, 1912; denomination \$1000. Address L. O. Tisdal, secretary Water, Light and Bond Commission.

Ga., Quitman.—Official: The Hillyer Trust Co., Atlanta, Ga., recently purchased \$52,000 of 4½ per cent. 25-year school-building and fire-department bonds voted January 16, 1912;

denomination \$1000; dated March 14, 1912; maturity March 14, 1937.

Ga., Senola.—Official: Voted May 20: \$10,000 of 6 per cent. schoolhouse bonds; denomination \$1000; dated July 1, 1912; maturity July 1, 1914, and \$1000 every even year. As soon as bonds are validated they will be placed on the market. L. L. Hutchinson is Mayor.

Ga., Washington.—Official: An election is to be held to vote on \$30,000 of street-paving bonds. E. H. Barrett is Mayor.

Ky., Harlan.—An election is to be held June 15, it is reported, to vote on \$10,000 of school-building bonds.

Ky., Henderson.—An official letter says that bonds for water-works are to be voted on next November. W. I. Thompson is Mayor.

Ky., Lancaster.—Official: The Harris Trust and Savings Bank of Chicago purchased at \$29,585 the \$29,000 of 5 per cent. Lancaster Graded Common School bonds voted April 6, 1912; dated April 8, 1912; denomination \$1000. S. D. Cochran is president School Board.

La., Gueydan.—A. L. Arpin of Grand Rapids, Wis., is reported to have purchased at par \$100,000 of Gueydan drainage bonds.

La., New Orleans.—Official: Bids will be received until noon June 20 for \$300,000 of 5 per cent. Public Belt Railroad bonds of New Orleans; denomination \$1000; redeemable July 1, 1939, to July 1, 1959, inclusive. Address Charles R. Kennedy, City Comptroller.

Md., Cambridge.—The Eutaw Savings Bank of Baltimore is reported to have been awarded \$20,000 of 5 per cent. bonds.

Md., Frederick.—Bids will be received until noon June 18 for \$25,000 of 4½ per cent. 15-30-year Frederick county bonds; dated May 1, 1912; denomination \$500. Markwood D. Harp is Clerk and Lincoln G. Dinterman president County Commissioners of Frederick County.

Md., Hyattsville.—Official: Hambleton & Co., Baltimore, have purchased the \$7000 of 5 per cent. 25-year fire-department bonds.

Md., Pocomoke City.—Official: Bids will be received until June 17 for \$35,000 of 5 per cent. street-paving bonds.

Md., Princess Anne.—Reported voted: \$10,000 of water and sewer bonds. J. Thomas Taylor is Mayor.

Miss., Ellisville.—Official: Bids were received until noon June 3 for \$10,000 of 5 per cent. Agricultural High School building bonds; denomination \$1000; dated April 1, 1912; maturity April 1, 1917, and one each succeeding year. Address B. Dutsoze, president Board of Supervisors.

Miss., Monticello.—Reported that the sale of \$75,000 of courthouse and \$50,000 of bridge Lawrence county bonds has been authorized.

Miss., Meridian.—Election is called for June 11 and 12 on \$20,000 of 5 per cent. 30-year

ASSETS REALIZATION COMPANY

CAPITAL, - \$10,000,000

Finances important established enterprises fundamentally sound but hampered by shrinkage of quick assets. Special facilities for investigation and supervision.

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NEW YORK

25 Broad Street

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Lafayette Building

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First National Bank Building

H. F. SIEBER & COMPANY

FISCAL AGENTS

Stephen Girard Building, Philadelphia.

We are prepared to furnish capital for the development of sound industrial propositions, Irrigation, Lighting Plants, Electric Railway and independent telephone corporation bonds placed on a reasonable commission basis. Thorough audits of corporation books by our own experts. Companies incorporated and reorganized. Charges commensurate with the value of services rendered.

FOREIGN REPRESENTATION.

To Manufacturers and Capitalists

Contemplating the Establishment of Industrial Enterprises

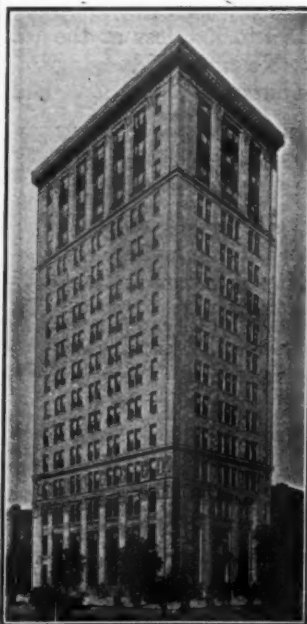
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NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

W. B. LIVEZEY, President

OLD DOMINION LAND COMPANY
NEWPORT NEWS, VA.



4%

Our savings department gives 4% interest, compounded quarterly, and our certificates of deposit yield 4% quarterly, and your principal is absolutely safe. Since starting, 1869, we have grown rapidly. Conservative and able management has always characterized our institution. Printed matter gladly mailed on request.

The Savannah Bank & Trust Company

SAVANNAH, GEORGIA

Capital and Surplus - \$1,200,000

OFFICERS

Wm. F. McCauley, Pres. Cashier—M. D. Paffy.
Chas. G. Bell, Vice-Pres. Asst. Cash.—E. M. Nichols

By reason of her geological location and her trunk railway systems, Savannah reaches a larger interior territory at lower average freight rates than any other South-Atlantic port.

newer bonds; also on June 11 on \$100,000 of paving and drainage bonds, and on the same day on \$30,000 of viaduct bonds. C. W. O'Leary is City Clerk.

Mo., Cassville.—Reported defeated: \$40,000 of Barry county courthouse bonds.

Mo., Carthage.—June 18 an election is to be held, it is reported, to vote on \$10,000 of Carthage district school bonds.

Mo., Kansas City.—Reported voted: \$2,000, 400 of school bonds.

Mo., Lebanon.—\$20,000 of 5 per cent. high-school building bonds are reported sold to William I. Diffenderfer of Lebanon.

Mo., Poplar Bluff.—Reported that bids will be received by H. Ruth, president Board of Education, until June 18 for \$50,000 of 4½ per cent. 10-20-year school bonds.

Mo., Stockton.—Reported that the \$19,000 of 5½ per cent. Cedar county road bonds were purchased by Sutherland & Co. of Kansas City.

N. C., Charlotte.—Press dispatches state that steps are to be taken by the finance committee of the aldermen to sell \$90,000 of municipal bonds.

Okla., Cheyenne.—Steps are reported being taken to sell \$60,000 of water-works and other improvement bonds.

Okla., Collinsville.—Official: C. A. Reese, Muskogee, has purchased at par \$45,000 of 6 per cent. 25-year bonds for construction of light and power plant; denomination \$1000; dated September 1, 1911; maturity September 1, 1936. Wm. M. Gresham is Town Clerk.

Okla., Kenefick.—Reported that W. E. Strickland, Town Clerk, is receiving bids for \$15,000 of 6 per cent. 25-year water-works bonds.

S. C., Columbia.—Steps are reported being taken to float \$5,000,000 of State refunding bonds.

Tenn., Jackson.—Official: Bids will be received by Thomas McCorry, Judge of Madison county, until noon July 3 for \$125,000 of 4½ per cent. 25-year school bonds; denomination \$500; dated July 1, 1912.

Tenn., Knoxville.—Bill is reported passed authorizing the issuing of \$125,000 of sewer bonds.

Tex., Austin.—The Attorney-General is reported to have approved securities as fol-

lows: \$17,000 of sewerage bonds of La Grange; \$6000 of 5 per cent. 20-year bonds of Dallas county common school district No. 9; \$1200 of 5 per cent. 10-20-year district No. 38, Dallas county; \$50,000 of 5 per cent. 20-40-year San Angelo street bonds; \$10,000 of 5 per cent. 10-40-year Moran Independent school district bonds; \$1500 of 5 per cent. 5-10-year Coleman county district No. 47 bonds; \$30,000 of 5 per cent. 40-year Mount Vernon water-works bonds; \$2900 of 5 per cent. 2-20-year bonds of Houston county common school district No. 4; \$50,000 of 5 per cent. 40-year bonds of Taylor school district No. 5; \$600 of 5 per cent. 10-20-year district No. 22, \$2000 of 5 per cent. 20-year district No. 16 and \$800 of 5 per cent. 10-20-year district No. 38 Fisher county school bonds; \$1200 of 20-year district No. 55 and \$1500 of 2-20-year district No. 20 5 per cent. Houston school bonds; \$130,000 of bonds of drainage district No. 5, Harris county.

Tex., Calvert.—Reported voted: \$150,000 of road and \$25,000 of sewerage bonds.

Tex., Greenville.—Official: Defeated: \$400,000 of road bonds of Precinct No. 1, Hunt county. Sid L. Arnold is County Clerk.

Tex., Hillsboro.—Reported voted: \$40,000 of school bonds.

Tex., Port Arthur.—Press dispatches state that \$19,000 of street improvement bonds are to be issued.

Tex., Sinton.—Reported voted: \$44,000 of school-building bonds.

Tex., Stamford.—Reported that an election is to be held to vote on \$25,000 of school bonds.

Va., Chatham.—An official letter says that a petition was presented to the Circuit Court of Pittsylvania county asking for a vote upon a bond issue of \$100,000 for road improvement in Dan River Magisterial District in said county, but owing to irregularities in the petition, election was not ordered. It is expected that an amended petition will be presented at the next term of court, which commences July 15.

Va., Chase City.—Official: Bids will be received until 8 P. M. June 14 for \$25,000 of water and \$30,000 of sewerage 5 per cent. 10-30-year bonds; denomination \$1000; dated July 1, 1912. Address N. H. Williams, Town Treasurer.

Va., Graham.—Reported sold: \$50,000 of 5 per cent. 30-year bonds.

Va., Staunton.—July 2 an election is to be held to vote on \$250,000 of bonds of South River district, Augusta county. H. W. Holt is judge of Circuit Court.

W. Va., Marlinton.—Official: Hoehler & Cummins, Toledo, O., purchased at \$727.50 the \$7500 of 6 per cent. 20-year improvement bonds offered May 29; denomination \$500; dated June 15, 1912; maturity June 15, 1932. This is part of a \$15,000 issue authorized July 12, 1906. A. P. Edgar is Mayor.

W. Va., Morgantown.—Official: Clay district, Monongalia county, is to vote on \$200,000 of bonds with which to purchase a like amount of bonds for the proposed Morgantown & Dunkard Valley Railroad Co.

At Jackson, Tenn., bids will be received until noon July 3 for \$125,000 of 4½ per cent. 25-year Madison county school bonds. Further particulars will be found in the advertising columns.

At Frederick, Md., bids will be received until noon June 18 for \$25,000 of 4½ per cent. 15-30-year Frederick county bonds. Further particulars will be found in the advertising columns.

FINANCIAL NOTES.

The Monroe County Bank of Monroeville, Ala., is reported to have increased its capital from \$30,000 to \$60,000.

The First State Bank & Trust Co. of Abilene, Tex., is reported to have increased its capital from \$55,000 to \$100,000.

The First National Bank of El Paso, Tex., proposes, it is stated, to increase its capital stock from \$600,000 to \$800,000.

Press dispatches from Washington, D. C., state that on June 15 the Continental Trust Co. will open a branch in the Goldenberg Bldg., 7th St. and Rhode Island Ave. N. W. Henry B. Byrd will be manager.

The North Carolina Savings Bank & Trust Co. of High Point, N. C., according to press dispatches, has reorganized with \$100,000 and changed its name to the Bank of Commerce. Oscar E. Kearns is president.

A condensed statement of 310 banks in

South Carolina April 18, 1912, shows loans and discounts, \$53,045,590; due from banks and bankers, \$7,708,076; capital stock paid in, \$11,752,742; surplus fund, \$4,009,607; undivided profits, \$2,474,231; due to banks and bankers, \$957,206; demand and time certificates of deposit, \$4,125,834; total resources, \$69,258,372.

A condensed statement of 248 State banks doing business in Virginia April 18, 1912, shows loans and discounts, \$53,861,608; bonds, securities, etc., owned, including premiums, \$5,242,748; due from banks, bankers and trust companies, \$8,480,413; total resources, \$73,861,708; capital stock, \$10,449,202; surplus fund, \$5,080,944; undivided profits, less interest, taxes and expenses, \$2,335,490; total deposits, \$52,906,530; due to banks, bankers and trust companies, \$1,065,586; total resources, \$73,861,708.

At the annual meeting of the Arkansas Bankers' Convention, held at Little Rock, May 28 and 29, the following officers were elected for the ensuing year: Charles G. Henry, Newport, president; J. S. Pollock, Little Rock, vice-president; C. S. Lemons, Wynne, treasurer; delegates to American Bankers' Association, L. W. McCrory, Eureka Springs; T. C. McKee, Prescott; Sam W. Reyburn, Little Rock; Henry Thane, Arkansas City; J. S. Turner, Ozark; alternates, C. S. Fitzpatrick, Helena; Ed. L. Parsons, Calico Rock; A. N. Sicard, Fort Smith; W. D. Hearne, Pine Bluff; executive committee, W. P. Wells, Group No. 1; Chas. G. Henry, Group No. 2.

At the annual convention of the Tennessee Bankers' Association, held at Knoxville May 29 and 30, the following officers were elected for the ensuing year: J. N. Fisher of Morristown, president; vice-presidents—East Tennessee, J. W. Willis, Greeneville; Middle Tennessee, W. N. Kannon, Jr., Franklin; West Tennessee, J. N. Harminson, McKinzle; treasurer, S. P. Witt of Lenoir City; chairman executive council, Fred Collins, Milan; members of executive council, F. L. Fisher, Knoxville; Sterling Fort, Clarksville, and E. L. Rice, Memphis; members legislative committee, R. B. Barbee, Ripley; vice-president of American Bankers' Association for Tennessee, I. B. Tigrett, Jackson; representatives to American Bankers' Association's conventions, J. L. Hutton, Columbia, and D. M. Armstrong, Memphis.

Schacht

An Ideal General Utility Truck

The powerful Schacht for general utility purposes is a *proved* model. It has a chassis built for years of *service*—an engine of untiring strength—big loading space, 11 ft. 5 in. back of seat on chassis frame. Speed up to 18 miles an hour—capacity 1 to 4 tons.

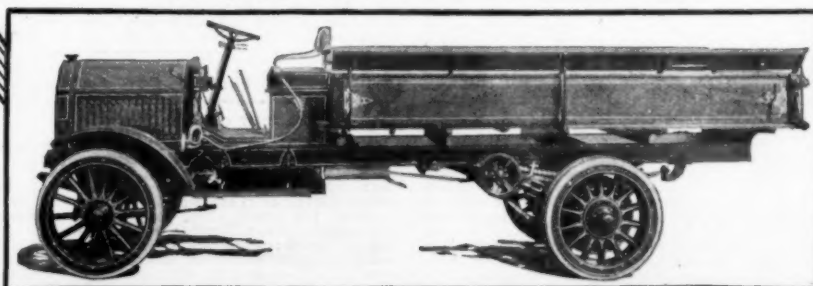
Horse-drawn vehicles can no longer compete with the Power Wagon. *More* trips are made with the truck—*quicker service* is made possible—teamsters' wages are practically eliminated—greater satisfaction is given.

1, 2, 3 and 4 Ton Sizes

The construction of the Schacht is far *stronger* than some truck manufacturers think necessary—but Schacht users have found that added strength pays them big dividends.

Our illustrated booklet will give you full description and details of the Schacht Truck. Write us a postal or letter today and receive this booklet. It will be mailed *free of charge* to you.

The Schacht Motor Car Co.
2850 Spring Grove Ave. Cincinnati, Ohio



Classified Opportunities

MEN WANTED

WANTED—Manager with \$5000 or more to invest in a well located and equipped machine shop in town of 3000 people; good opportunity for right man. Address Box 132, Cheraw, S. C.

HIGH-GRADE SALESMEN having acquaintance among large manufacturers will hear of side line paying liberal commission; no samples required. Address "Allen," Box 993, Cincinnati, Ohio.

WANTED—Tool designer; man with experience in designing and machinery. Reply to Employment, Box 911, Pittsburgh, Pa.

WANTED—A man to act as our general agent to sell and appoint subagents (as a side line) for our Texas lands and city properties. Address, stating present occupation, German-American Land Co., San Antonio, Tex.

SALESMAN, thoroughly experienced in the mantle, grate, tile and lighting fixture business, to travel in North Carolina and Virginia; headquarters, Norfolk, Va. Write Box 477, Norfolk, Va.

WANTED—Manager for a rotary veneer plant, to be located near this city; cheap timber; good demand for product; must have \$5000 to take interest in business; only an experienced man of the best habits need apply. Southern Trust Co., Little Rock, Ark.

WANTED—High-grade salesmen to call on architects and heating trade in Baltimore and vicinity, to handle the best down-draft heating boiler and vapor vacuum system on the market; on a commission basis. Address P. F. Lee, No. 79 Commerce St., Norfolk, Va.

WANTED—Experienced man to take charge of small tinning plant engaged in tinning wire shelves; must understand pickling solutions, etc., and must be able to turn out large quantity of work with perfect finish. Address Chattanooga Iron and Wire Works, Chattanooga, Tennessee, giving references, and state experience, and what pay expected.

LIVE CULVERT SALESMEN WANTED. To represent up-to-date and strong corrugated culvert manufacturing plants, located in Roanoke, Va.; Wilmington, N. C., and Jacksonville, Fla.; only high-grade and experienced culvert salesmen, familiar with the trade in the territories mentioned, are desired. For full particulars address Perry Van Horne, Canton, Ohio.

WANTED—A manager for a hardwood mantle and toilet-seat factory; fine healthy Southern town; good schools; also an opportunity for the right party to get an interest in the business; must furnish good references. Address John Lambert, Maryville, Tenn.

SCHOOL TEACHERS WANTED

WANTED—Teachers wanted for the public schools. Address D. T. Baldwin, Agua Nueva, Texas.

SITUATIONS WANTED

YOUNG CIVIL ENGINEER, experienced in city and farm surveying, drafting, also municipal work, is desirous of securing a position with a town or land company as engineer for same; reference if desired. Address No. 1040, care Manufacturers Record.

YOUNG MAN, age 25, who can handle any street-paving or county road proposition, open for employment; desires connection with construction company that can offer good position to efficient man who knows the business and can get results; location immaterial; 7 years' experience; good references. Address "H," 610 2d Ave., Dallas, Tex.

MR. MANUFACTURER, do you want a real salesman who can handle big business? One with experience as sales and advertising manager, competent to handle your office sales work, your advertising or your big orders? I want to make a change. Write me. Address No. 1039, care Manufacturers Record.

MAN of first-class references, now and always employed, desires position with large mining or textile corporation looking after property, operatives' cottages, etc.; with present employers 16 years; object in changing, to locate in milder climate. Address No. 1037, care Manufacturers Record.

BOARD OF TRADE—An enthusiastic and successful newspaper and advertising man, 9 years' experience as secretary chamber of commerce, is open for engagement as secretary board of trade; has recognized talent for originating and promoting board of trade enterprises. Correspondence solicited with lively Southern and Western cities. Highest references. Address J. E. Williams, Watervliet, N. Y.

POSITION—Young man, thoroughly familiar with sawmill operation, tramroad construction, etc.; present employed as general manager of 25 M. capacity mill; best references, present and past employers, and executive ability to validate same; willing to invest in good proposition where knowledge of Southern markets and hard work will be appreciated. Address No. 1035, care Manufacturers Record.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

AGENCIES WANTED

WANTED—Manufacturer's agency for building material, including mantels, tiling, etc. E. C. Berkeley, 301 Mutual Bldg., Richmond, Va.

AGENCY WANTED, on commission or salary and commission, for Atlanta and vicinity and Birmingham; high-grade goods to the hardware and building material people; can take charge of territory and get results; can give all or part of time. Address A. M., Box 177, Decatur, Georgia.

ATTENTION, MANUFACTURERS!

Brokers and manufacturers' agents with excellent offices and facilities in Kansas City are open for a good proposition. Are able to take charge of the general sales end of a meritorious product. Address No. 1024, care Manufacturers Record.

TWO energetic, wide-awake young men, now located in Buffalo, having both executive and selling experience, are desirous of securing high-grade agency connections for Richmond, Virginia, and vicinity; expect to open office in that city on or before September 1. This is an excellent opportunity to become capably represented in the fast-growing South. Address No. 1034, care Manufacturers Record.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

BANKS

THE PALMETTO NATIONAL BANK, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

AUDITOR AND ACCOUNTANT

INVESTORS—STOCKHOLDERS.—JOHN S. OGLESBY, PUBLIC ACCOUNTANT, DALLAS, TEXAS. Impartial audits; disinterested appraisals; economical, simple systems. All work given personal attention and supervision. Highest references. Correspondence invited.

CAPITAL WANTED

MANUFACTURING CONCERN with established business wants \$50,000 additional capital; would not object to working partner; situated in mountains of North Carolina; ideal climate and situation. Address No. 964, care Manufacturers Record.

WANTED—Fifty thousand dollars in blocks of one, two and three thousand, for home-building in Lakeland, Florida; A-1 security and ten per cent. interest. Address G. C. Rogan, Box No. 536, Lakeland, Fla.

A RUBBER-MANUFACTURING COMPANY possessing very valuable trade secrets and formulas desires more capital in order to handle its rapidly-increasing business; a safe investment for those desiring more than 10 per cent. on their money. Address No. 1038, care Manufacturers Record.

OFFICE AND WAREHOUSE FACILITIES

FOR RENT—Two floors, each 20x125 feet, in building in iron and machinery district of St. Louis, close to several of the railroad freight offices and a few blocks from shipping; have office in front of second floor; suitable for carrying stock of metal or mill supplies or light machinery; rent low. Address No. 1019, care Manufacturers Record.

WAREHOUSE FOR LEASE AT CHATTANOOGA, Tenn.—Three floors and basement; about 19,000 feet floor space; in heart of city, very prominent street; R. R. switch in rear, and wagons can load three sides of building; very convenient to depots, express offices and postoffice; best building in city for wholesale, warehouse or manufacturing; rent reasonable. Apply 114 McCauley Ave., Chattanooga, Tennessee.

PARTNER WANTED

PARTNER with \$15,000 wanted to join me in forming construction company to operate in the South. Address No. 1036, care Manufacturers Record.

BUSINESS OPPORTUNITIES

ABSTRACTS OF TITLE a specialty. Loans negotiated. Inheritances investigated and procured. Real Estate Title Co., New Martinsville, W. Va.

INDUSTRIAL ENTERPRISE—First-class irrigation project and township proposition; railroad building towards it; big sure winner for the man who can finance it; climate unsurpassed. Box 217, Marfa, Texas.

MANUFACTURING and machine shop would like to correspond with young man of clean, Christian habits, thoroughly trained in this line, with view of investing a working interest with us. Address No. 999, care Manufacturers Record.

MANUFACTURERS AND INVESTORS.—No quicker way to get rich than to market a good invention. We have several splendid propositions. Write us. Adam Fisher Mfg. Co., St. Louis, Mo.

WELL-ESTABLISHED kerosene-oil stationary and marine engine manufacturing business would like to consolidate with some live, up-to-date machine shop; have sold over 2500 of these engines in this country and abroad; highest testimonials of efficiency and economy. Edward Wilbur, 125 Summer street, Boston, Mass.

FOR SUBURBAN DEVELOPMENT—For Sale—Splendid tract of land on electric line, many advantages for subdivision; close in, adjacent to growing suburban section of this rapidly-growing city; something worth buying and developing or holding for advance. R. H. Scruggs, Norfolk, Virginia.

CRUSHING AND GRINDING

CRUSHING AND GRINDING—A concern near Baltimore with railroad siding and excellent facilities will crush and grind all kinds of minerals and clays at lowest rates. Address No. 1001, care Manufacturers Record.

TECHNICAL SUPPLIES

TECHNICAL SUPPLIES—Manufacturers' agents. Drawing materials, mathematical, scientific and engineering instruments. Enterprise Typewriter & Supply Company, 609 E. Baltimore St., Baltimore, Md.

MIMEOGRAPH SUPPLIES

MIMEOGRAPH SUPPLIES sold directly to consumers at half the usual price; goods used for years, are strictly up to date and of the best. Send for price-list. Edwards Brothers, Ann Arbor, Michigan.

INDUSTRIES WANTED

CANNING PLANT

CANNING ESTABLISHMENT WANTED. We will be glad to take some stock with experienced canning-factory man with capital. We are the center of the greatest fruit, truck and vegetable country in the world. Write to Secretary Young Men's Business League, Rusk, Texas.

MISCELLANEOUS

LAREDO, TEXAS, wants a tourist hotel, cement factory, up-to-date educational institution, down-the-river railroad. Laredo has best coal Texas, natural gas, equable climate, abundant water, labor. In citrus fruit district. Address Board Trade.

NORFOLK, VIRGINIA, is a growing, thriving city; splendid climate; eight trunk-line railroads; great harbor; steamships to domestic and foreign ports and many other advantages; liberal inducements for manufacturing plants, home seekers and those who want to build and sell houses. Address Ballentine Realty Corporation, Norfolk, Va.

INDUSTRIAL PLANTS FOR SALE

FREIGHT CAR PLANT

FOR SALE—Freight-car plant, located one hour's ride from Chicago; excellent terminal facilities; plant complete, ready for operation; capacity 25 cars per day; wood mill and machinery new, all motor driven; erecting shop, blacksmith shop, power-house, all brick construction; 30 acres of land; seven miles of track; plant all fenced in; all in first-class condition. Full information, address P. O. Lock Box 301, Chicago, Ill.

WATER-WORKS PLANT

WANT TO SELL WATER-WORKS PLANT in best city west of Fort Worth, in Texas; 6000 people now and growing rapidly; three trunk-line railroads in operation; people prosperous and progressive. Ben Anthony, Sweetwater, Tex.

PLANING MILL

FOR QUICK SALE will sacrifice small 30 M. feet capacity planer mill, fully equipped; small sawmill 15 M. feet capacity; improved drykilns of very best make. This is A-1 proposition, admirably located in South Carolina, on three railroads, with cheap timber in neighborhood sufficient for 10 to 15 years' supply; health, labor and other conditions unsurpassed; all machinery and buildings practically new; terms to suit purchaser; good reasons for wishing to sell, which will be explained to party interested. Anyone wishing a permanent and going proposition will do well to investigate. Address No. 1030, care Manufacturers Record.

NEWSPAPER PLANT

FOR SALE—NEWSPAPER PLANT in a new and fastest-growing town in New Mexico; worth about \$1700. Also for other investments, agriculture or otherwise, write Hellberg & Blair, 418 Roberts-Banner Bldg., El Paso, Texas.

LAND WANTED

WE WANT TRACTS OF LAND located in or immediately adjoining thriving cities; must be well located and suitable for plating into town lots. F. J. Raymond Realty Co., Evansville, Ind.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

BEFORE YOU BUY LAND or make an investment in the South or Southwest send for a copy of my "Investor and Land Buyer" with list of splendid properties for sale; free on application. Jo A. Parker, Parma, Mo.

SAN ANTONIO—330 acres, partly within the city limits; very high and slightly; close to street car and ripe for development; the best speculative buy in S. W. Texas. With two new railroads opening headquarters here a tremendous impetus has been given business in this section. Owner must sell. Price \$100 per acre; far below market value. Rhodius & McAllister, Exc. Agts., 413 Navarro St., San Antonio, Texas.

\$50,000.00 IN THREE YEARS—Invest in Washington real estate. As the nation grows so must its capital city develop. The increased value of Washington real estate in the past three years was approximately \$50,000,000. Did a portion of this represent your profits? We are now placing on the market one of the best-located subdivisions in the choice northwest section, fronting one mile on Sixteenth street, and overlooking the National Rock Creek Park. The future of this section will make this the best investment in the suburbs of the national capital. For plat and full information apply to Robert E. Heater, 411-412-413 Colorado Building, Washington, D. C.

CITY PROPERTY

173 FEET front by 150 deep on Houston street, San Antonio, next block from Clower Building and one block from the big Rand building now going up, which will be used as a big department store; price \$1000 per front foot; will sell part. Kerr & Moore, Land Merchants, San Antonio, Texas.

OIL AND FARM LANDS

WHAT DO YOU KNOW ABOUT THIS? \$125 per acre buys 100 acres in Bartlesville oil district; half finest farm land; balance good grazing, all in grass; producing oil wells within a few hundred feet on three sides; thought to be two oil sands here, one deep, one shallow; title lately cleared, absolutely good. Buy now while land is cheap and oil is higher than for years and still climbing. If not sold soon shall lease. Three companies want to drill this. For quick action will take only \$125 per acre. W. A. Thompson, Tahlequah, Oklahoma.

COAL MINE FOR SALE

COAL MINE FOR SALE—Eastern Oklahoma; equipped and operating; daily capacity, 300 tons; conditions first class; good reason for selling; price, \$70,000, cash. Rees Evans, Box No. 896, Muskogee, Okla.

COAL LAND FOR SALE

COAL—14,000 acres of the choicest coal lands in West Virginia. R. B. Chaffin & Co., Inc., Richmond, Va.

FOR SALE—3750 acres undeveloped Muhlberg county coal; fronts on two railroads and river; test hole adjoining shows 3 veins, 7 ft. 6 in. 5 ft. 6 in. and 4 ft. 6 in.; total, 17½ ft.; test 250 ft. deep. Price very low. For particulars address Chas. E. Baker, Madisonville, Ky.

COAL AND TIMBER LANDS

1100 ACRES timber and lignite coal land in Bastrop county, Texas; coal mine property adjoining, now in paying operation; on "Katy" Railroad; fine post oak and cedar timber all over tract. Price, thirty thousand dollars; terms, one-third cash; balance to suit purchaser. R. L. Carter, Elgin, Texas.

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Classified Opportunities

FROM 1999 to 30,000 acre tracts famous Sewanee vein coal, a combination of coal and timber, near railroad, in Grundy county, Tenn. Address Shelton & Beard, Altamont, Tenn.

SLATE QUARRY
FOR SALE—A slate quarry; 200 acres fine-quality roofing slate; adjacent to two railroads; low price. New London Development Co., Arcade Bldg., Greensboro, N. C.

CUT-OVER LANDS
FULL INFORMATION furnished upon request regarding choice timber and cut-over tracts in Mississippi, Louisiana and Arkansas. Barney & Hines, Inc., 1353 Central Bank Bldg., Memphis, Tenn.

CUT-OVER TIMBER TRACTS.
50,000 acres cut-over pine lands, Miss. \$6.50
20,000 acres cut-over pine lands, La. 6.00
75,000 acres cut-over pine lands, Tex. 5.00
18,000 acres cut-over hardwoods, La. 4.50
Marsh Lands for Reclamation.
60,000 acres in a body, Gulf Coast of La. 3.00
Timber Lands.
20,000 acres L. Y. pine, Fla., cut 3500 ft. 7.00
15,000 acres L. Y. pine, Ala., cut 7000 ft. 21.00
20,000 acres hardwood, cut 10,000 ft. (60% red gum) 10.00
Finest red gum proposition South.
Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

TIE PROPOSITION WANTED
WANTED—To buy a tie proposition, either yellow pine or yellow pine and cypress combined, on a stumpage basis, on payments. D. E. Peiper, Ft. Lauderdale, Fla.

SAWMILLS AND TIMBER
I HAVE FOR SALE IN N. C. S. C. and Ga., sawmills with aggregate timber holdings of upwards of two billion five hundred million feet short and long leaf yellow pine. Some of these can be bought for or less than the timber value alone, mills and equipment thrown in. Also have several million feet without mills. Tell me what you want. J. E. Barrett, Carrsville, Va.

HARDWARE TIMBER OPPORTUNITY
HARDWOOD OPPORTUNITY for operator of good credit to contract for any part of 500,000,000 feet hardwood Eastern Kentucky, to be paid for as cut at low stumpage price. No cash required. Must build mill on property. J. H. S., Room 1408, 60 Broadway, New York City.

TIMBER LAND FOR SALE
TIMBER PROPERTIES—Over 200,000,000 ft. (35,000 acres) hardwood timber in North Carolina; large percentage poplar and white pine; valuable property; safe investment. Price \$400,000.
Several hundred million ft. of hardwood timber with new and up-to-date mill in Georgia; a bargain. Price on application.
40,000,000 ft. (7500 acres), nearly all pine, with complete mill, on railroad in Eastern N. C.; fine logging proposition; a cheap and very desirable property; important to sell at once. Price \$87,000.
15,000 acres, in one body, in Northern Georgia, 1 1/2 miles from R. R.; easy logging; 4000 to 5000 ft. per acre. Price \$9 per acre in fee.
12,000,000 ft. to 15,000,000 ft. (1800 acres), mostly pine, 1 to 2 miles from R. R. in Southern Va.; fine logging; rate to Pittsburgh, 16¢; Philadelphia, 16¢. Price \$45,000.
Other fine timber properties. Write for data. H. W. Hilleary & Co., 729-30 Southern Building, Washington, D. C.

FOR SALE—A bargain in timber land on transportation to an early buyer. S. Shafer & Co., Pineville, Ky.

IF YOU WANT cypress lands, pine lands, cut-over tracts, colony tracts, ten and twenty-acre tracts, orange groves, truck farms, write to G. C. Rogan, Box 536, Lakeland, Fla. Fifteen years in the State.

TIMBER LANDS FOR SALE.
20,000 acres, W. Va., average 6000 ft. merchantable hardwood timber. Price \$10 per acre.
16,000 acres, W. Va., will cut 90,000,000 ft. timber. Price \$22.50 per acre.
34,000 acres, Fla., will yield 275,000,000 ft. L. Y. pine, 50,000,000 ft. cypress; splendid proposition. Price \$8 per acre.
9000 acres in fee, 3000 acres timber rights and railway, Va., estimated 60,000,000 ft. hardwood. Offer solicited for quick sale.
8000 acres, Ark., average 5000 ft. per acre, hardwood. Price \$8 per acre.
15,000 acres, Ark., estimated to cut 10,000 ft., at \$12.50 acre.
32,000 acres, Va., 76,000,000 ft. hardwood estimated. Price \$15 per acre.
For further information regarding above write to Frank Van Sant, 91-2 Southern Bldg., Washington, D. C.

FINE TIMBER LAND FOR SALE.—Five hundred and sixty acres on Wambaw Creek, six miles from McClellanville, South Carolina; tract contains enough cypress to make eight million shingles, and one and one-half million feet N. C. pine, also hardwoods; land good for agricultural purposes; fish and game in abundance; steamboat landing in center of place. For particulars apply to C. F. Hardy Alvin, S. C., or W. B. Ravenel & Company, Charleston.

FOR SALE—TIMBER LANDS.—17,000 acres; 100,000,000 feet merchantable oak, yellow poplar and hickory; located in Central Virginia; valuable water-power on property. Address Edward S. Wilder, care Jefferson Natl. Bank, Charlottesville, Va.

SEVEN THOUSAND ACRES virgin timber, containing 180,000,000 feet cypress, 20,000,000 feet of pine, oak, gum, etc.; three railroads and river transportation; best cypress proposition in Florida; \$300,000. For particulars address G. C. Rogan, Box 536, Lakeland, Fla.

FARM AND TIMBER LANDS
MUST BE SOLD.—4000-acre rice farm. 2000 acres black prairie land. 2000 acres cut-over lands. Each tract separate. Prices far below worth. For full particulars address W. M. Gunstream, Orange, Tex.

I HAVE BARGAINS IN TIMBER TRACTS, large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.
Wm. R. Taylor, Land and Timber Investments, 508 Perrin Building, New Orleans, La. Established 1898. Sales over \$6,000,000.

COLONIZATION LANDS
2000 ACRES good vegetable land, Fayette county, on railroad, suitable for colonization; \$30 per acre. Kerr & Moore, Land Merchants, San Antonio, Texas.

ALABAMA COLONIZATION LANDS.—Large tracts unimproved lands near Mobile; great port; also in other parts of State; low prices; no better propositions in South; productive soil; a present opportunity. Write us. Alabama State Agricultural Land Co., Center, Alabama.

COLONIZERS AND INVESTORS.—Three thousand acres of choice Dimmitt county artesian belt land, 2 1/2 miles railroad station; suitable for development or colonization; surrounded by the best flowing wells in Dimmitt county, and adjoining land now selling above \$100 per acre. The price and terms are right. Texas Land & Loan Co., 229 East Houston St., San Antonio, Tex.

EIGHTY THOUSAND ACRES in Brewster Co., Texas; close to railroad; best colonization tract for \$5.50 in Texas; plenty of water for irrigation; soil is rich, 75% tillable, and smooth.
Eight thousand acres in Jackson Co., Texas; in rain belt; equally divided in prairie and timber; rich black sandy loam, underlaid with clay soil; no finer tract to subdivide; will retail from \$30 to \$40; five miles from railroad. Price \$16. Write us quick for full particulars. Geo. C. Thompson Land Co., No. 226 St. Mary's St., San Antonio, Texas.

PLANTATIONS FOR SALE
MISSISSIPPI.—3555 acres of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central R. R.; nearest shipping point four miles from the dwelling. The land corners within half mile of the shipping point. A sufficiency of cabins for tenants, stables, cribs, cotton pens and all outbuildings; 45 head of mules and horses, cows, farming implements and feedstuff. Price very low; terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner.

ORCHARD PROPERTIES
Selected from our lists we offer in the Piedmont section of Virginia 1100 acres rich mountain soil, mostly Porter's black loam, considered the finest in the State for apples and peaches; 12 miles from large city over fine road; 5 miles from two competing R. R.'s; 200 acres in orchards, over which large power spraying outfits are operated; 137 acres in apple trees 6 to 11 years old, mostly Winesaps and Albemarle Pippins; 13,000 peach trees 1 to 10 years old, some interplanted with apples, but most are in solid blocks; crop past 4 years has averaged \$10.67; 1910 crop was \$25.35; prospect for bumper crop this year; trees have had fine attention; good buildings. Price, \$75,000, including teams, farm and orchard equipment. Will subdivide into tracts of \$10,000 or more. Write for special booklet of orchard properties.
H. W. Hilleary & Co., 729-30 Southern Building, Washington, D. C.

ORANGE GROVES
ORANGE GROVES planted, cultivated and guaranteed for four years; \$500 per acre; \$50 down, \$10 monthly; no interest or taxes; 15 miles from New Orleans. N. J. Ciesl, 821 Gravier St., New Orleans.

FARM, FRUIT AND TRUCK LANDS

ALABAMA
FARM BARGAINS.—28 acres, 7 miles of courthouse; between 400 and 500 fruit trees, with heavy crop of fruit; peaches will be ripe in few weeks; practically all under cultivation and will make good truck farm; \$3500; this is a bargain.
80 acres in same neighborhood; 25 acres in cultivation; nice lot of fruit trees; 4-room house and outbuildings; \$7500.
40 acres in half mile of Mount Flow Spring, on Shades Mountain; \$1500.
80 acres in half mile of St. Clair Spring Hotel; unimproved; \$2250.
Can get terms on all above property. If you are looking for bargain in farm lands it will pay you to see me, as I have many others at prices equally as attractive. M. F. Webb, 201 Jefferson Co. Bank, Birmingham, Ala.

C. C. MECHEM, Bank of Mobile Building, Mobile, Ala., makes a specialty of handling small tracts of land on easy terms. He guarantees his titles in the Title Insurance Co. of Mobile, Alabama, charges no interest on deferred payments and pays all taxes until deed is delivered. Call and see him.

ARKANSAS
WE HAVE FOR SALE between 3000 and 8000 acres of rich corn, cotton and rice lands at prices from \$10 per acre up, in tracts from 40 acres to as high as you want. This is a bargain, as this section of country is booming and land increasing in value all the time. You can easily double your money within the next three years if you invest here. No overflows. No fake or get-rich scheme about it, but a straight-out business proposition. Come to see. We will show you the land. Terms made. Thompson & Cox, Weiner, Ark.

FLORIDA
FOR SALE—Some of the best farming lands in Escambia county; improved and unimproved; prices right; terms reasonable. Address A. E. Hinman, Century, Fla.

FLORIDA FARMS ARE FORTUNES.—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

GEORGIA
FOR SALE—450 acres, 3 1/2 miles of Americus, on fine automobile road; high, dry and healthy; 350 acres open; especially adapted to general farming; melons, fruits, stock raising, etc.; 10,000 peach trees in bearing; 5-room house, barns, cribs; pure water; ideal home; soil red and gray. Price, \$40 per acre; 1/4 cash; balance 6% interest. Take this and double your money. P. B. Williford, Americus, Ga.

MISSISSIPPI
ALFALFA LANDS.—If interested in best alfalfa and grain lands, situated in the Black Prairie section of Northeast Mississippi, write to W. A. Houston, Okolona, Miss.

TEXAS
640 ACRES fine alfalfa and fruit land, four and half miles Plainview, Texas; \$40 per acre. Kerr & Moore, Land Merchants, San Antonio, Texas.

4000 ACRES good farming land, seven miles railroad, in Lee county, Texas; price \$8 per acre; a bargain. Kerr & Moore, Land Merchants, San Antonio, Texas.

FOR SALE—Fifty acres; improved; one of the best homes in the famous Galveston district; oranges, figs, etc. \$7500. Henry Mackay, Abion, Tex.

459 ACRES in artesian belt, F 200 acres valley land; \$25 per acre. Improved farm, fine onion land, two Floresville, Wilson county, Texas, \$75 per acre. Kerr & Moore, Land Merchants, San Antonio, Texas.

2464-ACRE FARM on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

10,000 ACRES Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

FINE LANDS IN COAST COUNTRY—RAIN BELT.—Soils, dark sandy loam and black bog-wallow; red clay subsoil; any size tract, 40 acres up; improved and unimproved; near two towns; two railroads; good schools and churches. Prices right. Terms reasonable. Southwestern Development & Land Co., San Antonio and Houston, Texas.

ZAVALLA COUNTY.—3300 acres, with small house, barns, two good wells, windmills; contains 400 acres tillable land. You cannot buy land anywhere near this for less than \$10 per acre. Our price is only \$6.50 per acre, and we give you terms. Petty & Boudreaux, City National Bank Bldg., San Antonio, Texas.

SAN ANTONIO, UVALDE & GULF RAILROAD, now building, will open the finest fruit and truck growing sections in the State. Strong flow of artesian water at shallow depth. We can supply small irrigated farms or colonization tracts. Opportunity to double your money within year. West Texas-Mexico Land Co., San Antonio, Texas.

8000 ACRES of fine mesquite land, all fenced, with 200 acres in cultivation; has good 6-room house and outhouses, with 8 wells with windmills and tanks, the deepest well being only 28 feet deep.

Every foot of this land is as level as your hand and can all be put under cultivation, lying in the great artesian belt and under one of the largest irrigation canals in the valley, same being about five miles from two good towns on the R. R. This canal is now under construction and will be one of the largest in Cameron county when complete.

Price \$15 per acre; one-half cash, and balance in one, two and three years at 8 per cent. interest. Address P. O. Box 167, Brownsville, Tex.

TEXAS BARGAIN.—Seventeen hundred acres land on Santa Fe, in Lynn county, near Slaton, at fifteen dollars per acre; can resell in small tracts at twenty, net. Buy Texas land through us; we will make you money. Can give best of bank reference. Kerr & Moore, Land Merchants, San Antonio, Tex.

VIRGINIA
FOR SALE—Fine farm of 140 acres, on Broad Bay; good buildings; good soil; in high state of cultivation; boating, bathing, fishing; 50 acres in oysters, from which an annual revenue of \$2500 is derived from oysters alone. This property is near electric car line and is a bargain. Price \$25,000. L. Jackson, 215 Arcade Bldg., Norfolk, Va.

FINANCIAL
FOR SALE—I have for sale 8 per cent. mortgages on improved farms in North Louisiana; none better. W. A. Jones, authority on North Louisiana Lands, Shreveport, La.

WHERE security and high dividend earnings are desired the 7 per cent. cumulative preferred stock of Virginia Farm Development Corporation will meet the demand. The stock is equivalent to other first mortgage bonds. Particulars on application. Southern Finance Co., Norfolk, Va.

FIRST MORTGAGE LOANS cautiously selected in Texas; 2 to 5 years, 8%, \$1000 to \$5000, to suit investors. Any well-informed man can tell you of the substantial values in Texas and the Southwest. This company was especially organized for this line of business and we give it most careful attention. First Mortgage Trust Company, San Antonio, Texas.

MORTGAGE LOANS, carefully selected, on good cotton and corn farms in Southern Oklahoma; 5-year, 8%, \$250 to \$2500, to suit investors. This country's population, 35,000; assessed values, \$10,000,000; one of largest cotton producers. Can place your money very safely; 25 years' experience; 10 years bank cashier here; intimately acquainted with lands, people, conditions; abundant references; circular. Write J. G. James, Roff, Okla.

FOR SALE—7% first mortgage real estate bonds. Kauffman Investment Co., 735 American National Bank, Oklahoma City, Okla.

FIRST MORTGAGE LOANS on Texas farm and ranch securities, based on 40% to 50% of actual value, unquestionably represent the highest security obtainable today. We have on hand well-secured first mortgage real estate loans taken with our own funds, bearing from 6% to 7% semi-annual interest, in amounts of \$500 and up. If you have idle money, investigate these securities. We personally inspect the property, examine the titles, know the men, and will collect the interest each year, also the principal when due, without charge to you. We lend money for individuals as well as mortgage companies. References: Any bank in San Antonio, or Bradstreet and Dun. Write Gilliam, Henry & Austin, Land Mortgage Bankers (unincorporated), Suite 633-640 Bedell Building, San Antonio, Texas.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER and Patent Lawyer, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

INVENTIVE GENIUS deserves reward. Patent does you no good unless sold. We undertake sale of patents obtained through our attorneys. Are splendidly located and equipped. Adam Fisher Mfg. Co., 88-14, St. Louis, Mo.

PATENTS THAT PROTECT. Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. FitzGerald & Co., 817 F street, Washington, D. C. Established 1878. Send for our book.

PATENT YOUR IDEAS.—\$100,000 offered for one invention, \$8500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advance your patent for sale at our expense. Chandise & Chandler, patent attorneys, 978 F street, Washington, D. C.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

PATENTS FOR SALE

IMPROVEMENTS in safety elevators, which should be investigated by elevator manufacturers; patent recently granted. For full information address Germain Roussel, 1101 Diamond Bank Bldg., Pittsburgh, Pa.

PROPOSALS

PUBLIC BUILDINGS,

CONSTRUCTION BONDS

MISCELLANEOUS.

GOVERNMENT PROPOSALS

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., June 4, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 16th day of July, 1912, and then opened, for the extension, remodeling, etc. (including plumbing, gaspiping, heating apparatus, and electric conduits, wiring system, and lighting fixtures) of the United States appraisers' stores, Galveston, Tex. The work comprises a one-story extension of about 2130 square feet area, a three-story extension of about 2160 square feet area, and a third story on the present building, which has an area of about 6850 square feet. The extension to be brick faced, with sheet-metal cornices, composition roof, non-fireproof construction. Drawings and specifications may be obtained from the custodian at Galveston, Tex., or at this office, in the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., May 24, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 8th day of July, 1912, and then opened, for the construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the extension, remodeling, etc., of the United States Postoffice at Portsmouth, Ohio. The extension is to be of one and two stories and basement, of approximately 2100 square feet ground area, brick faced, with slate roof, and of non-fireproof construction, except the first floor. Drawings and specifications may be obtained from the custodian of the site at Portsmouth, Ohio, or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., June 1, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 15th day of July, 1912, and then opened, for the construction (including plumbing, gaspiping, heating apparatus, electric conduits, and wiring and interior lighting fixtures) of the United States postoffice at Fairmont, W. Va. The building to be one story and basement, approximately 7920 square feet ground area, brick faced, with stone trimming and tin roof. Copies of the drawings and specifications may be obtained from the office of the custodian of the site at Fairmont, W. Va., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

FORT MYER, VA., May 20, 1912. Sealed proposals in triplicate for the removal of old boilers in post hospital and annex building and substituting new ones will be received at the office of the Constructing Quartermaster until June 12, 1912, and then opened. Certified check or surety company's guarantee for 10 per cent. of the amount must accompany each bid. Plans and specifications will be furnished upon application with a deposit of \$5 to insure safe return. The Government reserves the right to reject any or all bids. Envelopes should be marked "Proposals for removing old boilers from post hospital and annex building," and addressed to the Constructing Quartermaster, Fort Myer, Virginia.

PROPOSALS will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 o'clock A. M. June 18, 1912, and publicly opened immediately thereafter, to furnish at the Naval Academy, Annapolis, Md., a quantity of Portland cement. Applications for proposals should refer to Schedule 4593. Blank proposals will be furnished upon application to the Navy pay office, Baltimore, Md., or to the Bureau. T. J. COWIE, Paymaster-General, U. S. N.

U. S. ENGINEER OFFICE, 920 17th St. N. W., Washington, D. C., May 23, 1912. Sealed proposals for furnishing materials and erecting, complete, a brick storehouse on Potomac Park, will be received here until 12 M. June 12, 1912, and then publicly opened. Information on application. W. C. LANGFITT, Lieut.-Col., Engrs.

NEW BOND OFFERINGS

\$125,000 4½% School Bonds

Sealed bids will be received by Thomas McCorry, County Judge of Madison county, Tennessee, at Jackson, Tennessee, until 12 o'clock noon July 3, 1912, for \$125,000 4½ per cent. School Bonds of Madison county, interest payable semi-annually, denomination \$500, dated July 1, 1912, maturing twenty-five years after date. Said bonds exempt from all State, county and municipal taxes.

Bonds for Sale

There has been an authorized bond issue of \$150,000 of 25-year 5 per cent. District No. 3 Bonds of Noduxee county, Mississippi, \$50,000 of which will be sold on Monday, July 1, 1912, at 2 o'clock P. M.

For further particulars apply to the undersigned Clerk.

JOHN A. TYSON,
Clerk Board Supervisors, Noduxee
County, Mississippi, P. O. Macon, Miss.

\$25,000 6% Bonds

The Board of Commissioners of Martin County, N. C., offers for sale twenty-five thousand dollars of its 6 per cent. Williamson Township Road Bonds, same being the remaining amount unsold of forty thousand dollars, authorized by an act of N. C. Legislature, session 1911, and by a vote of Williamson township. Said bids will be received until June 15, 1912. Certified check for one hundred dollars must accompany each bid for \$5000 or less. Bids to be sealed and can be made for whole or any part of said amount. Said bonds are in denomination of \$500 each, and are all payable 30 years after date. Interest semi-annual.

Address
H. M. BURRAS,
Chairman Board of Commissioners.
Williamston, N. C.

Lancaster County Township Bonds For Sale

Proposals are invited from purchasers for forty-eight thousand dollars (\$48,000) of non-taxable coupon bonds to be issued by the three largest townships in Lancaster county, S. C., bearing date July 1, 1912, payable forty years from date, interest at five per cent., payable annually. Issue to refund maturing railroad aid bonds. Bids to be opened 12 M. Thursday, June 20, 1912. No bid for less than par and accrued interest will be accepted. Certified check for \$500 must be filed by each bidder. Right reserved to reject any and all bids. Address
HARRY HINES, M. C. GARDNER,
County Attorney, or County Supervisor,
Lancaster, S. C.

\$35,000.00 Bonds For Sale Pocomoke City, Md.

5% 20-40-YEAR STREET-IMPROVEMENT COUPON BONDS.

Sealed bids will be received by the Mayor and Council of Pocomoke City, Md., until 3 o'clock P. M. June 17, 1912, for \$35,000 in bonds, as a whole or in lots, exempt from county and municipal taxation, for the purpose of providing funds for street improvement. Issued under provisions of Chapter 164, Acts of General Assembly of Maryland, January Session, 1912. Denomination \$500. Interest semi-annually. Dated July 1, 1912.

A certified check for 5 per cent. of amount of issue bid upon must accompany all bids, payable to Eugene W. Venable, Town Treasurer, to be returned if bid is rejected, and forfeited if bid is not complied with.

The Mayor and Council of Pocomoke City reserve the right to reject any and all bids. For further information address

E. JAMES TULL, Mayor,
Pocomoke City, Md.

\$15,000 Berlin, Worcester County (Maryland), Improvement and Extension Bonds

Sealed proposals will be received by the Mayor and Council of Berlin, Maryland, for the purchase of eight bonds of \$1000 each, ten bonds of \$500 each, twenty bonds of \$100 each, authorized by Chapter 521 of the Acts of the General Assembly of Maryland, 1910, until 8 o'clock P. M. June 20, 1912, said bonds to bear interest at 5 per cent. per annum, payable semi-annually; \$1000 will fall due July 1, 1914, and \$1000 annually thereafter; bonds will be dated July 1, 1912, and delivered as soon as practicable after acceptance of bids; accrued interest, if any, to be paid by the purchaser; bids for all or any part will be considered. The right is reserved to reject any or all bids. Address Mayor and Council of Berlin, Maryland.

\$74,000.00 5% Refunding Electric Light, Water-Works and Sewerage Bonds

Wilson, N. C., May 1, 1912. Sealed proposals will be received by the Clerk of the Board of Commissioners of the Town of Wilson, N. C., until July 1, 1912, at 12 o'clock M., for the purchase of \$74,000 5 per cent. coupon bonds, known as "Refunding Electric-light, Water-works and Sewerage Bonds of the Town of Wilson." Said bonds to mature 20 years after date of issue. Interest made payable semi-annually at the office of the Treasurer of the Town of Wilson, or at some bank in the city of New York, at the option of the purchaser. Each proposal must be accompanied by a certified check for \$2000, made payable to the order of the Treasurer of the Town of Wilson, as a guarantee of good faith, and to be forfeited to the said Town of Wilson as damages in the event of the failure of the successful bidder to comply with bid within ten days from the opening of said bids.

The right is reserved to reject any and all bids. For further information address
THEO. A. HINNANT,
Clerk Board Commissioners.
Wilson, N. C.

Selma (Ala.) Dallas County, \$35,000.00 Gold Bonds, 5%, 25 Years

Selma, Alabama. Bids will be received until noon June 15, 1912, for \$35,000 of 5 per cent. 25-year Public School Bonds. Denominations \$100, \$500. Dated July 1, 1912, maturing July 1, 1937. All bids must be accompanied with certified check for 5 per cent. of the amount of bonds bid on. The city reserves the right to reject any and all bids made. Address
J. L. CLAY,
Mayor.

May 25, 1912.

Bond Sale

OFFICE OF THE COUNTY COMMISSIONERS OF FREDERICK COUNTY, MARYLAND.

Frederick City, Md., May 21, 1912.

The County Commissioners of Frederick County will receive sealed proposals at their office in Frederick City, Frederick county, Md., until 12 o'clock M. on Tuesday, June 18, 1912, for purchase of twenty-five thousand dollars (\$25,000) or any part thereof of four and one-half (4½%) coupon bonds of Frederick county, Maryland, to be issued under Chapter 494 of the Acts of the General Assembly of Maryland of 1912.

These bonds will bear date of May 1, 1912, and will be payable thirty (30) years after date to bearer, redeemable, however, at the pleasure of said County Commissioners at any time after the expiration of fifteen (15) years from their respective dates. The coupons will be payable semi-annually; that is, on November 1 and May 1 of each year. The bonds will be exempt from all county and municipal taxation in Frederick county. They will be issued in sums of five hundred (\$500) dollars. All bids will be opened at 12 o'clock M. on Tuesday, June 18, 1912, and not before, at which time also the bonds will be ready for delivery on cash payment for them.

The said Commissioners reserve the right to reject any and all bids and to apportion the bonds as to the bids accepted among those bidding the same price. The law provides that none of said bonds shall be sold for less than par value and they shall not be sold except for cash. All bids must be addressed to the President of the County Commissioners of Frederick county, Frederick City, Md., and on the outside of the envelope containing the bid should be endorsed "Bids for 4½ per cent. Frederick County Bonds."

A certified check for 5 per cent. of the par value of bonds bid for, payable to the County Commissioners of Frederick County, Maryland, must accompany each bid. Purchasers will be required to pay in addition to price bid accrued interest from May 1, 1912, to date of delivery of bonds.

By order of the County Commissioners of Frederick County, Maryland,
LINCOLN G. DINTERMAN,
President.

MARKWOOD D. HARP,
Clerk.

PAVING

Concrete Walks and Paving

Bids will be received until 2 P. M. Monday, June 10, 1912, for concrete walks and street paving for the Town of Jeanerette, La. Plans and specifications and conditions for estimate can be had at the office of Warren B. Reed, Consulting Engineer, 1013 Hibernia Bank Bldg., New Orleans, La.

Paving

Clearwater, Fla. Bids will be received at the office of the City Clerk until June 18, 1912, for the construction of about 8200 square yards of pavement of vitrified brick, asphalt macadam or crushed rock. No bid or proposal will be received after 7 o'clock P. M. of said day, and to bid or proposal will be considered unless accompanied by certified check for \$1000. Plans and specifications will be on file with the City Clerk.

Right to reject any and all bids reserved.
THOS. J. SHERIDAN,
City Clerk.

Street Paving

Little Rock, Ark. Sealed proposals will be received until 8 P. M. June 20, 1912, by the Board of Commissioners for Street Improvement District No. 198 (West Tenth St.), Little Rock, Ark., for the grading, draining, curbing and paving with wood blocks, asphalt, bitulithic, concrete, tar-bound macadam or other materials. Plans and specifications may be seen at the offices of the Engineers of the district.

Proposals must be sealed and addressed to Joseph Saxton, Chairman, Little Rock, Ark., and must be accompanied by certified check for \$500. The Board of Commissioners reserves the right to reject any and all proposals.
JOSEPH SAXTON,
Chairman.
JOHN HAGAN,
Secretary.
FORD & MACCREA,
Engineers for District.

PUBLIC BUILDINGS

Notice

Amelia C. H., Va. Notice is hereby given that specifications, etc., for repairs to Amelia county Jail will be made and stated at Amelia C. H., Va., on June 19, 1912, and within ten days from said date sealed bids can be filed with the Clerk of the Board.

BOARD OF SUPERVISORS
OF AMELIA COUNTY, VA.
By S. L. Farrar, Clerk of Board.

Administration Building

East Radford, Va.

Bids will be received until noon June 23, 1912, for the erection of the Administration Building, State Normal and Industrial School for Women, at Radford, Virginia.

All bids must be delivered to W. T. Baldwin, Chairman of the Board, East Radford, Virginia.

Plans and specifications may be seen at the office of W. T. Baldwin, Chairman of the Board, East Radford, Virginia.

Plans and specifications will be furnished to contractors in the order applied for upon deposit of \$10 upon application to W. T. Baldwin, Chairman of the Board, or Charles M. Robinson, Inc., Architects, No. 2901 Grove avenue, Richmond, Virginia.

Certified check for \$500 to accompany bids of general contractors.

Certified check for \$100 to accompany plumbing bids.

Certified check for \$50 to accompany electric wiring bids.

The right is reserved to reject any or all bids.

W. T. BALDWIN,
W. D. SMITH,
J. P. JONES,
L. L. SCHERER,
Building Committee.

County Jail

NOTICE TO CONTRACTORS.

Sealed proposals will be received until twelve o'clock noon June 25, 1912, at the office of the Board of Revenue of Covington County at Andalusia, Alabama.

All bids shall be addressed to Mr. C. A. O'Neal, President of the Board of Revenue.

To insure consideration each bid must be accompanied with a certified check for \$500, payable to C. A. O'Neal, President of the Board of Revenue of Covington County, State of Alabama, as a guarantee of good faith in that the contractor will make bond in the sum of 12,500 in a surety company doing business in the State of Alabama, for the faithful performance of the work in accordance with the plans and specifications prepared by Frederick Ausfeld, architect, Montgomery, Alabama, and for the amount of his bid, and also for the return of the plans and specifications to the Board of Revenue of Covington County at Andalusia, Alabama, on the day of the opening of the bids.

The certified check shall be signed by an authorized official of a national bank or a State bank, and the bond required shall be filed with the Board of Revenue within fifteen (15) days from date of awarding the contract.

Plans and specifications are on file and can be obtained at the office of the Board of Revenue at Andalusia, Alabama, and at the office of the architect, Frederick Ausfeld, Montgomery, Alabama.

The Board of Revenue reserves the right to reject any or all bids.

MISCELLANEOUS

Heating Plant

The Dunn Graded Schools are in the market for Heating Plant for \$15,000 Building; main building having been in use several years; additions to the building will commence about June 15. Bids and information wanted. Address T. C. Young, Secretary, Dunn, N. C.

Heating and Lighting Plant

Bids will be received on Monday, June 24, 1912, for construction of central heating and lighting plant for the Tuskegee Normal and Industrial Institute at Tuskegee, Alabama. Buildings to be erected are: Power-house and coal bunker 203 ft. by 112 ft., of brick and concrete construction. Machinery to be installed: Water-tube boilers, engines, generators, pumps, steam-transmission system, electrical-transmission system, series tungsten street-lighting system, motors and transformers.

Plans and specifications may be seen at the office of R. R. Taylor, Director of Industries, Tuskegee Institute, Ala., or at the office of Walter G. Franz, Cons. Engr., Cincinnati, Ohio. Plans and specifications for bidders use may be obtained from the Engineer upon the deposit with him of a certified check for \$25.

WALTER G. FRANZ, Cons. Engr.,
1703 Union Trust Building,
Cincinnati, Ohio.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS.

MISCELLANEOUS.

Notice of Letting Drainage Contract and Bridges

Lumberton, N. C.

Sealed proposals for the construction of drainage canals, also 16 wooden bridges and 5 steel bridges, complete, with foundations, etc., in the Back Swamp and Jacob Swamp Drainage District, near Lumberton, N. C., will be received by the Drainage Commissioners of said district at Lumberton, N. C., up to 12 o'clock M. June 12, 1912, and at that time they will be publicly opened and read. Each proposal shall be enclosed in a sealed envelope and addressed to the Chairman of the Board of Drainage Commissioners of the Back Swamp and Jacob Swamp Drainage District, Lumberton, N. C., endorsed "Proposal for Constructing Drainage Canals."

Each proposal shall be accompanied by a certified check, drawn payable to the order of the chairman of the Board of Drainage Commissioners, in the amount of \$1000; this check to be an evidence of the good faith of the bidder, and to be held as liquidated damages in case the award is made and the con-

tract and bond are not entered into promptly. Checks of unsuccessful bidders will be returned as soon as the award is made.

Specifications and blank forms of proposals will be furnished upon application, and a full set of maps, plans and profiles may be seen at the office of the Drainage Commissioners, or at the office of the Attorney for the Drainage Commissioners, at Lumberton, N. C.

The approximate length of these canals is 52 miles, and the approximate yardage to be excavated is 1,240,400 cubic yards. The work must be finished within two years from the letting of the contract, and the Commissioners will require three dredges to be operated at the same time.

The work will be let either as a whole or in sections, but no bid will be considered for less than one-third of the entire work. Bidders may submit bids for the whole of said work or for one-third thereof. The right is reserved to reject any and all bids.

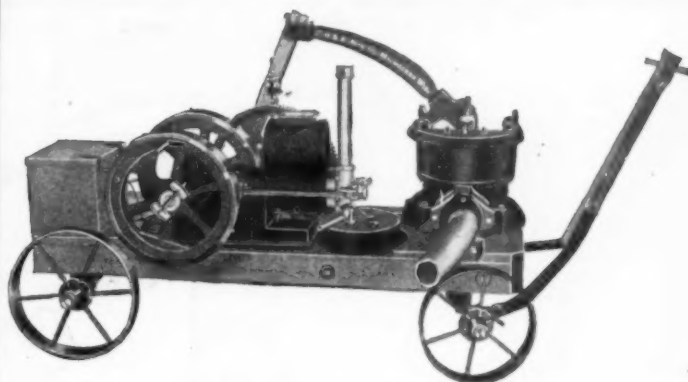
G. B. SELLERS,

Chairman for Board of Commissioners.

THOMAS L. JOHNSON,

Attorney for Drainage District.

F. F. WETMORE, Engineer.



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Two Climax Geared Locomotives, 36" gauge, one practically new, both in good condition. Also 6-ft. Phoenix Band Mill, complete. Erie City Boiler, 150 H. P., and Engine, 125 H. P., used about one year. 25 H. P. Boiler and Engine. Also small Portable Mill, complete. Can be seen at Pulaski, Va. Address

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CLASSIFIED OPPORTUNITIES

This department of the Manufacturers Record, as the name implies, is a collection of business opportunities of every description arranged in classified form for the convenience of our readers so that they can quickly locate any particular opportunity in which they may be interested, whether they are seeking a position, agent or employee, investments of various kinds such as city properties, timber and cut over lands, mineral and coal lands, farming and fruit lands, new location for a factory or home, purchasers for industrial and properties of all kinds.

This department is a market place where buyer and seller, employer and employee, capitalist and those offering investments can meet to their mutual advantage and profit, and it will pay those who may or may not be interested to give these columns a close study each week on account of the large and constantly changing variety of opportunities published in this department.

See pages 98 and 99 this week.

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Dept. D.

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*Preserves Roads
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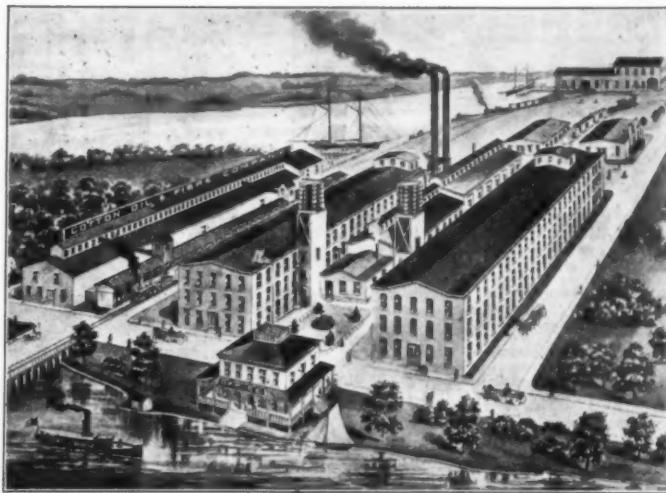
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 Riparian rights, 300 feet front on Elizabeth River, arm of Chesapeake Bay.
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250 to 400 H. P. Wetherill Corliss Engine, good operative condition. Price subject to prior sale \$800 F. O. B. cars.

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One second-hand Pump in good working order; three million gallons capacity; is to be replaced by a pump of larger capacity, and will be ready for removal after July 1, 1912.
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1 Class "J" Duplex Ingersoll-Rand Belt-Driven Air Compressor; cylinders 14 1/4x14 and 22 1/2x14; capacity, 1350 cu. ft. of free air per minute.
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Large Stock of Engines and Generators Locomotives and Cars

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Eight Steel Smoke Stacks, all sizes.
Four Steel Trusses, 50-foot span.

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Two 25 H. P. Gas Engines, each..... \$50.00
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1 10x14 Ide, piston valve.
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1 13x21 Buckeye, side crank.
1 13x18 Atlas L. H., heavy duty, 4-valve.
1 13x18 Erie City, L. H., 4-valve.
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Six-pole, compound wound, direct current, type M, speed 550 R. P. M., with base pulley and field rheostat. Condition like new. Guaranteed. Price \$750.00 cash. Send for list of other Bargains.

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Lillie Quadruple Effect

150,000 gallon capacity, with condenser, suitable for sugar or soda solutions. A bargain. For further particulars, apply to

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2 Lidgerwood Single Friction Drum Electric Hoists, speed 215 ft. per minute, 250 volts. Special standard No. 513, style 52, G. E. motor, 16 H. P., and one speeded to 250 ft. per minute.

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Large stock of Engines, Pumps, Air Compressors, all in A-1 condition.
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13x5 Seneca Falls, comp. rest, pan.
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18x3 Porter, compound rest.
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18x8 American, taper chuck.
18x8 Putnam, R. & F. rest.
20x8 McMahon, C. R. chuck.
20x9 Pratt & Whitney, compound rest.
20x10 Prentiss, C. R., P. C. F.
20x10 Draper, C. R., P. C. F.
24x14 Reed, high speed.
26x12 Pond, C. R. and chuck.
26x22 New Haven, plain turning.
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38x14 Pond, P. L. R., P. C. F.
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40x18 Newark, triple geared, C. R., P. C. F.
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An assortment of speed lathes.

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24x24 Jones & Lamson, flat turret.
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No. 2 1/2" Garvin, wire feed, friction head.
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3/4" National Acme, automatic.
3/4" Pratt & Whitney, screw shaver.
No. 2 Warner & Swasey, hollow hexagon.
18x6 Springfield, univ. fox.
No. 6 Brown & Sharpe, friction head.
1" Smurr & Kamen, wire feed.
1 1/2", 1", and 3/4" Pratt & Whitney, automatics.
2 1/4" 1-spindle Gridley, automatic.
1 1/2"x18" Pratt & Whitney.

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No. 2 Le Blonde, plain, back gears.
No. 2 Pratt & Whitney, Lincoln pattern.
No. 3 Cincinnati, plain.
No. 12 Brown & Sharpe, manufacturers'.
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20 in. x 8 ft. Lodge & Shipley, Q. C. G.
20 in. x 10 ft. Lodge & Shipley, Q. C. G.
24 in. x 8 ft. Lodge & Shipley, Q. C. G.
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1 18x36 Bates.
1 16x42 Allis.
1 16x42 Brown.
1 18x42 Lane & Bodley.
1 20x48 Wetherill.
1 22x48 Hamilton.
1 24x42 Allis.
1 22x48 Allis.
1 28x54 Hamilton.
Automatic Engines of all sizes.
1 40-ton Corliss Engine Type De La Vergne Ice Machine.
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1 lot Brewery Tanks.
Woodworking Machinery of all kinds.
Belting, Shafting, Pulleys and Hangers.

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For Sale Cheap

1 10-ton Hercules Vertical Ice Machine, direct connected to a 14x30 Corliss Engine, also 40 Galvanized Ice Cans, all complete, f. o. b. Charlottesville, Va., \$500.00.
1 150 H. P. Ball Automatic Engine, two flywheels, in excellent condition. Price \$350.00, f. o. b. cars Charlottesville, Va.
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1 1000-gallon Blake Underwriters' Fire Pump.
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2 72"x20' Horizontal Return Tubular, 175 H. P. each, 125 lbs. steam.
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1 54"x16' Horizontal Return Tubular, 70 H. P., 100 lbs. steam.
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Large stock of vertical types, all sizes.

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30"x48" Watts-Campbell Corliss.
26"x60" Corliss.
24"x54" Brown.
22"x42" Greene.
20"x42" Greene.
18"x42" Corliss.
16"x36" Nordberg.
14"x36" Allis.
14"x20" Russell.
12"x22" Greene.
12"x24" Wetherill.
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Large stock of smaller sizes; also Automatic and Plain Slide Valve, Vertical and Horizontal.

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1 100 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14"x14" Wright Center Crank Automatic Engine, 250 R. P. M.
1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18" Westinghouse Compound Engine, 315 R. P. M.
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42"x18" Pond.
36"x16" James Moore Screw Cutting.
32"x14" Johnson.
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22"x8" Lodge & Davis.
21"x7" Pratt & Whitney.
20"x10" Rahn-Larmon, gap swings 27" gap.
20"x8" Bullard.
20"x10" American Patent Head, arranged for motor also.
18"x8" Gray.
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14"x6" Fay & Scott.
14"x7" Lodge & Shipley, geared head.
Large stock of smaller sizes.

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20"x30" Pedrick & Ayer Open Side or Traveling Head.
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16" Heavy Duty Traveling Head.
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14" Steptoe.
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33"x33"x12" Woodward & Powell.
33"x33"x12" New Haven, one head.
30"x30"x10" Standard, one head.
30"x30"x5" Pease, one head.
28"x28"x7" New Haven.
26"x26"x7" Wheeler, one head.
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14"x14"x34" mounted on iron legs.

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36"x12" Heavy Duty Slab Milling Machine, very powerfully geared and capable of taking a heavy cut.
No. 2 Cincinnati Plain.
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Pratt & Whitney Duplex Miller, with mill work 27" wide, 6" high and 6' long.
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2 4' Gang Radial Drills (plain).
42" Hilles & Jones (plain).
24" Frontier.
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Large stock of 21" and 20", as well as Sensit-ive Drills.

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28" swing 7' bed Davis Turret Head Boring Lathe, 2 1/2" hollow spindle.
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2 26" Garvin Turrets, 3" hollow spindle.
12" Foster & Kimball Wire Feed Screw Machine.
17" Foster & Kimball Friction Head Turret.
No. 2 Garvin Wire Feed Screw Machine.
No. 3 Pratt & Whitney Screw Machine, 18" swing, 5' 6" bed, spindle capacity 1 1/2-16".
18"x6" Lodge & Davis Plain Turret Lathe, 1 1/2" hollow spindle.
1 1/4" Bardons & Oliver Turret Lathe, with cut-off slide rest, 2 chucks, no wire feed.
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1000 ton 40-lb. Relays and Angles.
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Low price. Quick shipment.

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56 TO 85-lb. Sections

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400 ton of 40-pound, with angles.
500 ton of 56-pound, with angles.
800 ton of 60-pound, with angles.
300 ton of 80-pound, with angles.
1800 ton of 90-pound, with angles.
Frogs, Switches, Bolts and Spikes.
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For Industrial Plants, Lumber Roads
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Our Rails are first quality. A. S. C. E.
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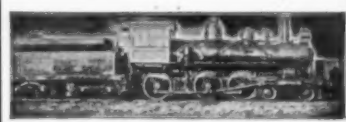
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3-54-ton 10-wheelers, 1-40-ton 8-wheeler,
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Standard Gauge Locomotive, suitable for
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One 18-ton Climax, 26" gauge.
Two 2x14 Baldwin Saddle-Tanks, 26" gauge.
The above locomotives practically new. Also
One 23-ton Standard-Gauge Climax.
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Over 50 other locomotives in stock at Bir-
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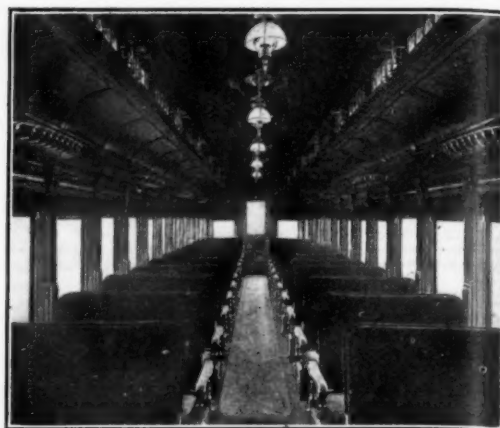
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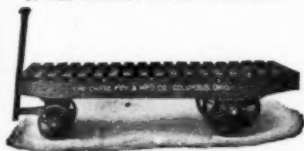
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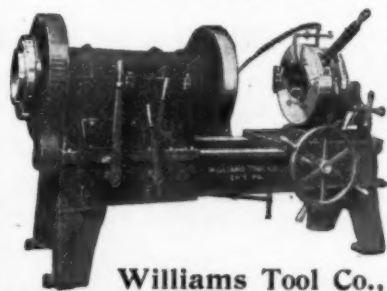
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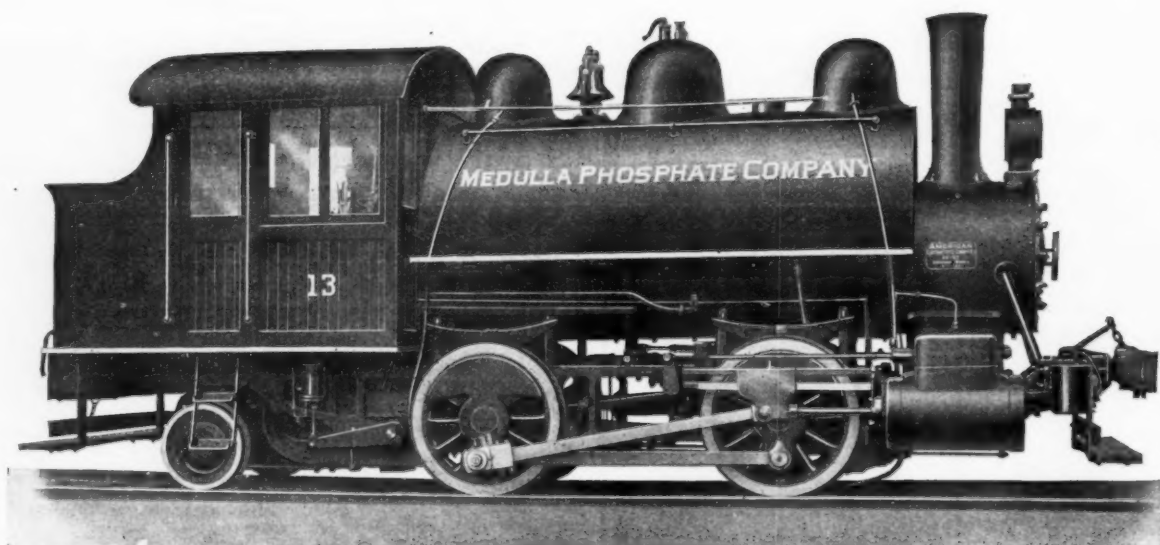
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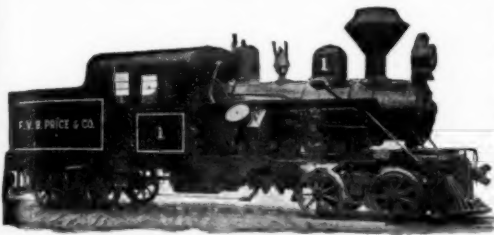
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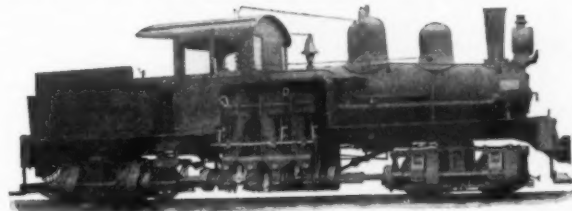
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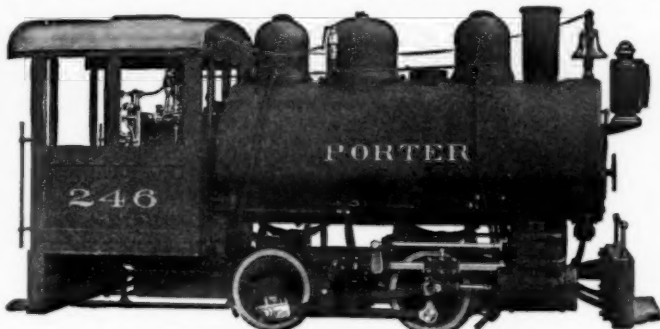
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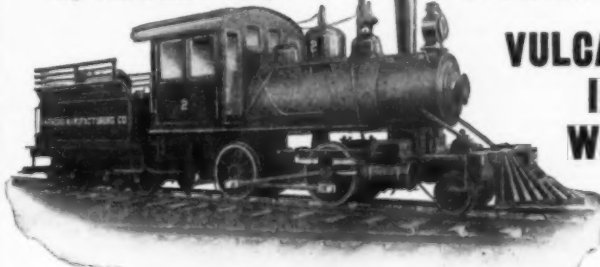
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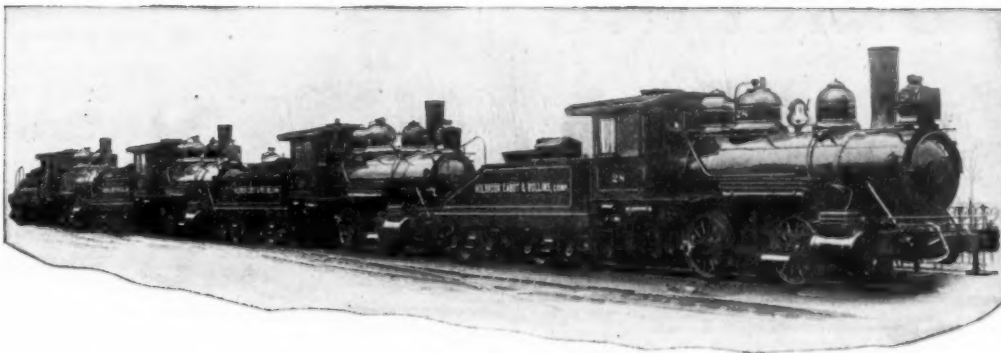
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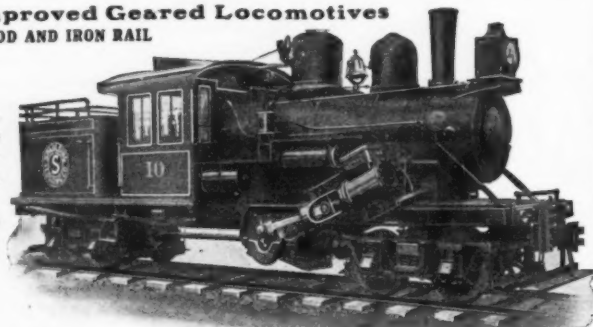


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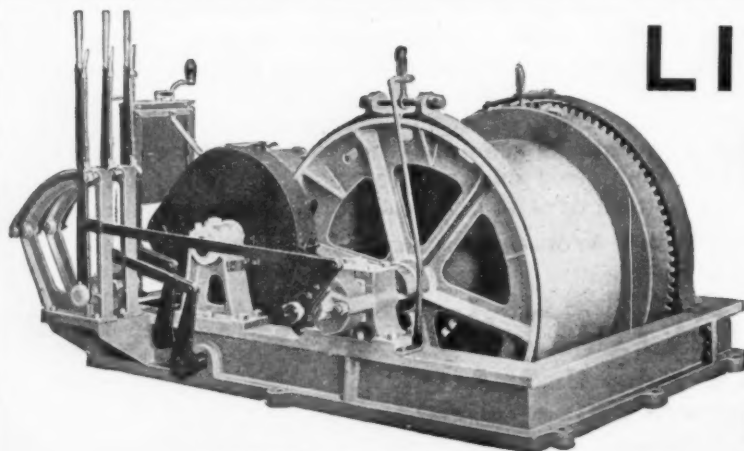
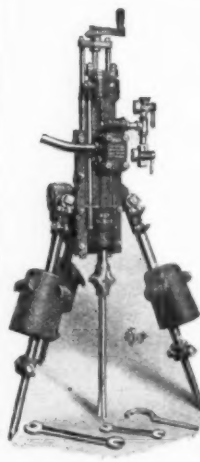
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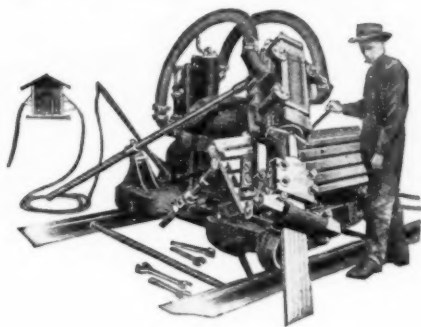
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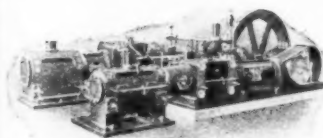
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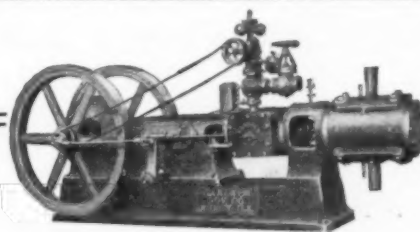
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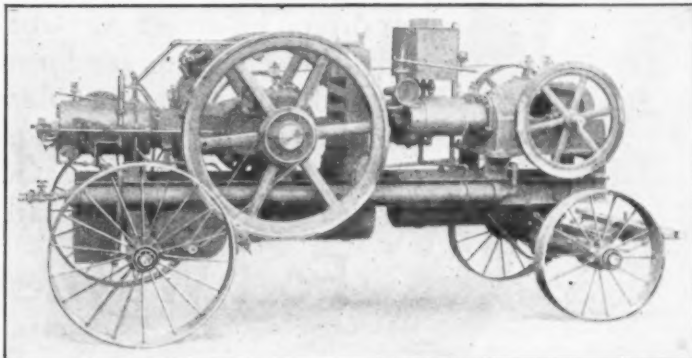
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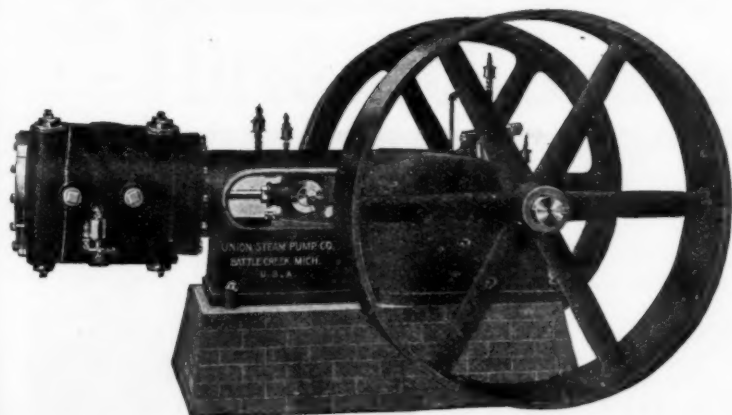
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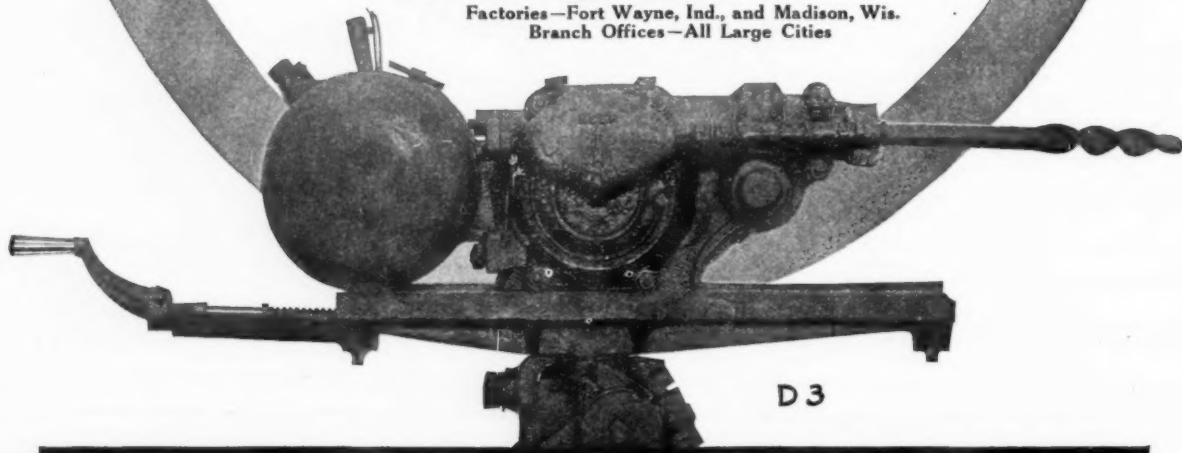
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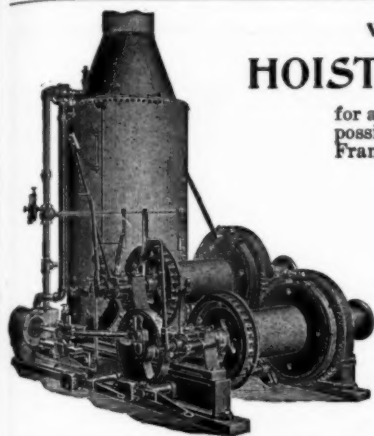
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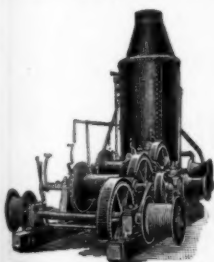
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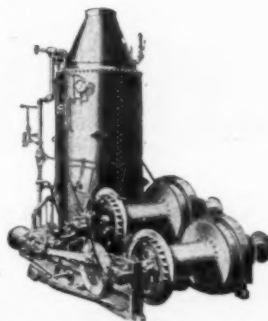
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A CLYDE-GRADE
ENGINE WILL KEEP
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Send for Catalog No. 21.



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NEW YORK - - - - - 30 Church Street
NEW ORLEANS - - - - - 421 Carondelet Street
SAVANNAH



ILLUSTRATION NO. A1195—A 21 cu. ft. Three-Sided Hayward Orange Peel Bucket back-filling on the Catskill Aqueduct. In this case the Bucket is operated by a Locomotive Crane, and while we recommend this type of bucket for the handling of boulders and blasted rock rather than for work in material such as this view shows, yet it further emphasizes the variety of purposes for which Hayward Buckets can be used.

How much money are you losing—
by inefficient digging machinery or hand-labor methods?

Have you ever stopped to figure out just how much you are losing? Our experience is that many **think** costs are down to the lowest point, when, by installing

HAYWARD BUCKETS and MACHINERY

they can increase profits by decreasing digging costs.

Not only that, but in either heavy work or light work, these Buckets have a record of accomplishment that has never been equalled.

Prices quoted on Buckets only, suitable for use with any type of operating machine, or prices quoted for Buckets and complete machines.

The advice and suggestions of our engineers on your particular problem can be had for the asking.

Complete Bucket CATALOG will be sent on request.

THE HAYWARD COMPANY
50 Church Street NEW YORK

ILLUSTRATION NO. C269.—A 15 cu. ft. Orange Peel Bucket operated by a travelling excavator in open sewer excavation work. This 15 cu. ft. Bucket working through sand, clay and hard-pan averaged 500 cu. yds. daily. The Bucket when open has a diameter of 5' 6", and was easily worked between cross bracings without damage to the timbers or danger to the workmen.



MARION REVOLVING STEAM SHOVELS

The many excavating propositions to which these cost-reducing, profit-increasing shovels are being adapted indicates that there is practically no limit to their range of service. Just now they are greatly in demand

FOR SEWER TRENCH EXCAVATION



Model 28 built for Johnston, Porter & Peckin, sewer trench excavation, Charlotte, N. C.

It's an easy matter to prepare Marion Revolving Shovels for this class of work. Simply substitute a special boom, dipper handle and dipper for the standard equipment. This is quickly done, and when so fitted they will dig sewers and trenches 30 in. to 14 ft. in width and 8 ft. to 20 ft. in depth, depending on the size of the special equipment.

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If yours is a sewer trenching proposition, it will pay you to investigate thoroughly Marion Ditching Machinery.

Write for further information.

The Marion Steam Shovel Co., Dept. H, Marion, Ohio

New York: 50 Church Street
Chicago: Monadnock Block

San Francisco: Monadnock Building
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Our Special Buckets

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Rope
Buckets

THE MARION-OSGOOD COMPANY, Marion, Ohio, U. S. A.

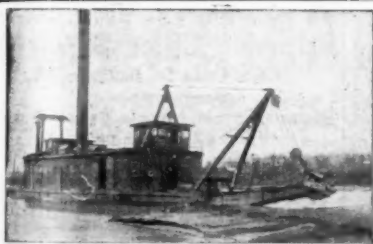


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Write fully covering your requirements. The advice and experience of our excavation experts is at your disposal.

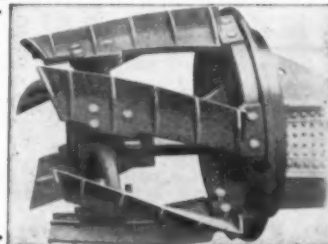


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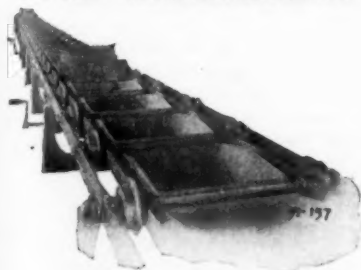


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A spur gear hoist with highest efficiency.
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Formerly Made By
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and are self-dumping and self-
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Made in all sizes, from 1/4-ton
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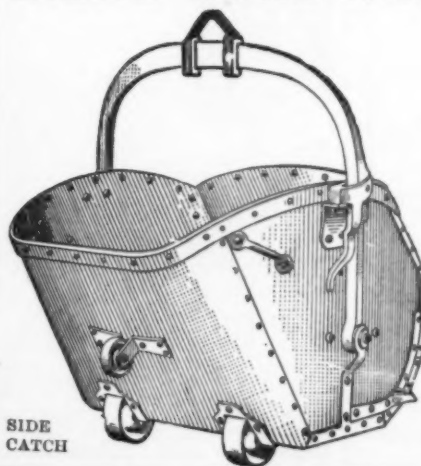
We make all sizes and styles
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refer you to a large number of
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Made with either Back or
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The oldest shop in America making
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They have a most excellent reputation.

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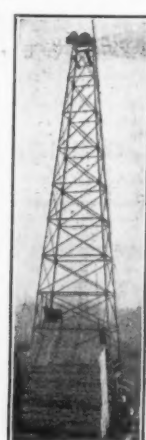
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The excavator shown in this cut can be placed on the work at less cost than any other excavating outfit. Crew for operating machine consists of only two men. The excavator is mounted on traction wheels provided with self-propelling mechanism. Boom is 40 ft. long. One cubic yard bucket. We will give you, upon request, full information regarding capacity, cost of operation, etc.

We build excavators with booms from 40 to 125 ft. long and buckets from one to three cubic yard capacities.

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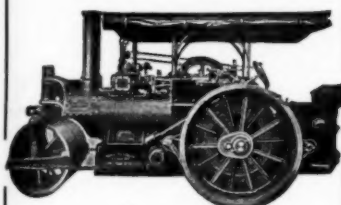
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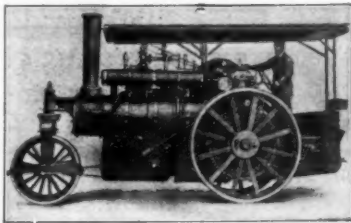
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For Protecting Edges of Concrete Curbs, Steps, Columns, Etc.**IT HAS A RECORD OF FOURTEEN YEARS' USE WITHOUT A FAILURE**

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ABSOLUTELY NON-BREAKABLE—CHEAPER THAN GRANITE.

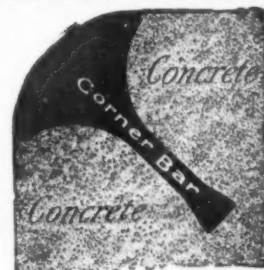
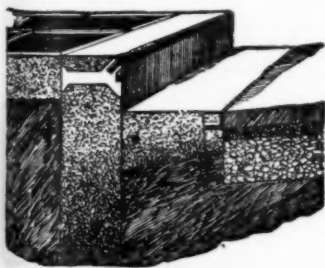
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THIS CURB WILL STAND HARDER USE AND LAST TEN TIMES AS LONG AS PLAIN CONCRETE CURBING
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ARCHITECTS are invited to read pages 238-239 "Sweet's Index"

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PHILADELPHIA, PA.**Road Builders of Experience Concede**

that the results obtained when bituminous materials are applied by a strong spray under uniform pressure, are superior to those obtained by the gravity methods, but the difficulty has been to obtain machines sufficiently simple for unskilled operators to handle, and light enough to move over broken stone in construction.

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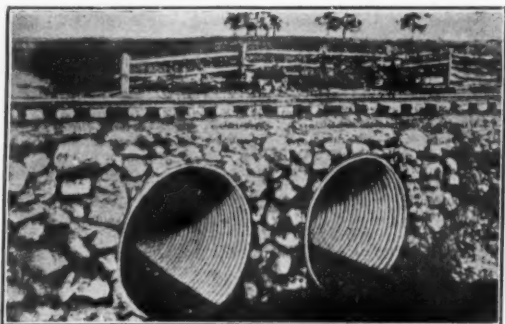
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 Last year's sales were large, but this year's

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It is all because the



**Eagle
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and Dump Box suit
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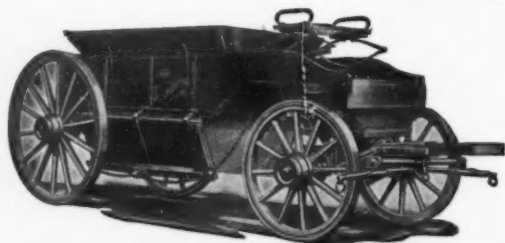
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Our New Model Drop Bottom Wagon



Made in 1½, 2, 2½ and 3-yard Capacities
 Other Sizes Built to Order

Our New Model "Susquehanna" Dumping Wagon has a continuous chain running under one door and over an Equalizer in the rear, thence under the other door to the roller in front.

The main feature is, that one door will always come up before the other, which allows a strip of band iron along the entire length of this door, making one of the tightest drop bottom wagons on the market. It has a wide body with reinforced steel wheel house, sets low to the ground, so as to be easy for loading.

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Quality

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It is our business and our pleasure to demonstrate these facts.

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These Corrugated Metal Culverts STAND THE STRAIN



The heaviest loads do not affect them.

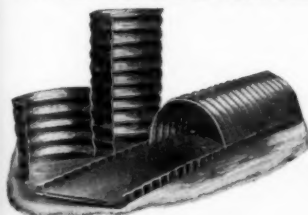
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A Corrugated Metal Arch securely locked to cast-iron base.

**Strongest Culvert Construction
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A perfectly smooth waterway.
No bolts or rivets. Shipped nested.
State rights may be secured so that castings may be made by local foundries. Agents wanted.

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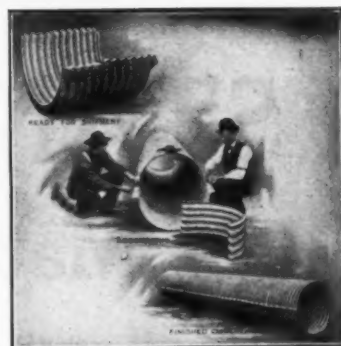
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American Ingot Iron Road Culverts, Tanks, Roofing and Siding.



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—Anti-Corrosive

Try It Yourself

PEOPLE who ought to know—customers of ours who have formerly used others—say that the ACME'S NESTAND Corrugated No-Co-Ro Metal Culvert is the best of all. Of course, the way for you to find out that this is true is for you to "try it for yourself." What can we do in your case to bring this about?

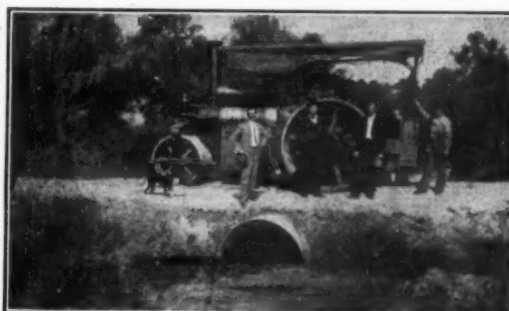
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Manufacturers
CANTON, OHIO

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is 5 ft. wide and is covered with only 5 inches of sandy soil. Notice the weight of the 10-ton Road Roller does not even deflect it. Twenty years of actual service is proof conclusive that corrugated culverts are durable and economical, and most convenient to install.

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MADE OF

**"Genuine Open
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Strongly Resist Rust and
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WE WOULD LIKE TO REFER
YOU TO

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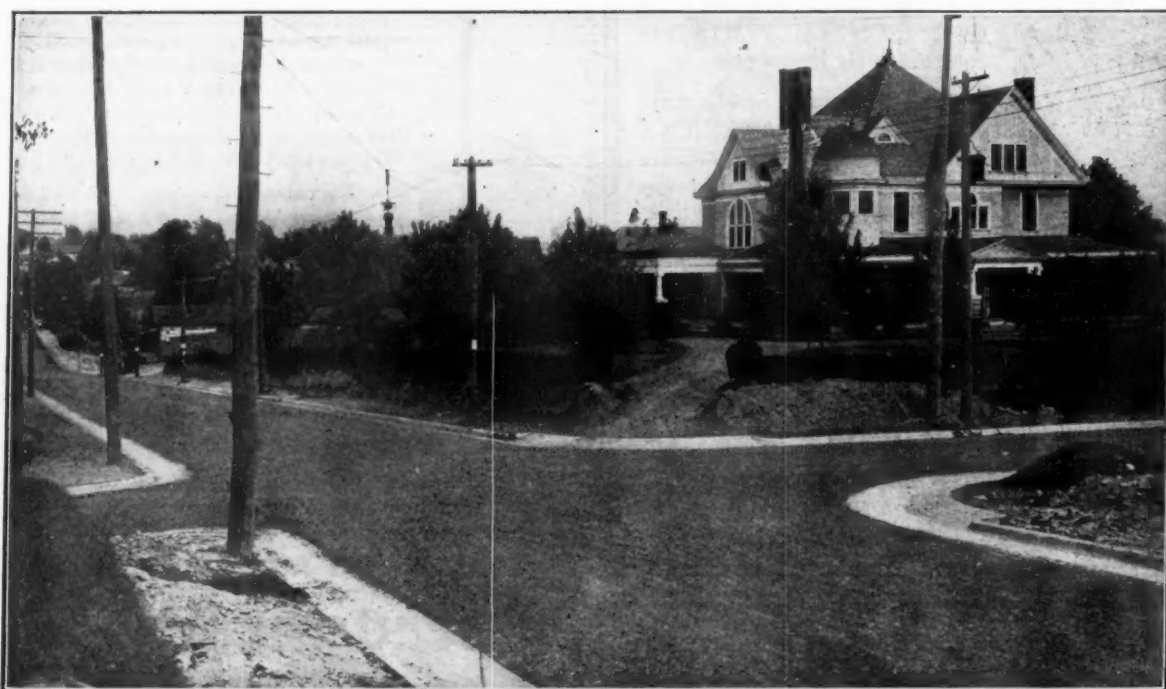
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New Orleans, La. Newport, Ky.



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Asphalt Macadam Binders and Asphalt Road Oils



Morehead Ave. and Duke St., Durham, N. C.—Treated With Standard Asphalt Macadam Binder

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These products are absolutely pure, containing over 99% bitumen, and can be manufactured to any consistency desired. The three grades "A," "B" and "C" will be found to solve all problems of road surfacing or road construction that are ordinarily met with.

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STANDARD ASPHALT ROAD OILS are made with varying percentages of asphalt, from the lightest, containing 30% asphalt, to the heaviest, containing 60% asphalt. Used under all conditions necessitating freedom from dust and protection of surface.

A full description of our various products, together with specifications for their correct use, is given in our Illustrated Booklet. This will be sent free upon request.

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(Incorporated in New Jersey)

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The Last Word In Street Pavements

The Dolarway Pavement is popular with City Officials, Highway Engineers and Property Owners because:

It is low in first cost.

Its maintenance cost is lower than that for any other permanent form of Pavement.

No paving plant is required to either construct or maintain it.

It is noiseless, dustless and resilient.

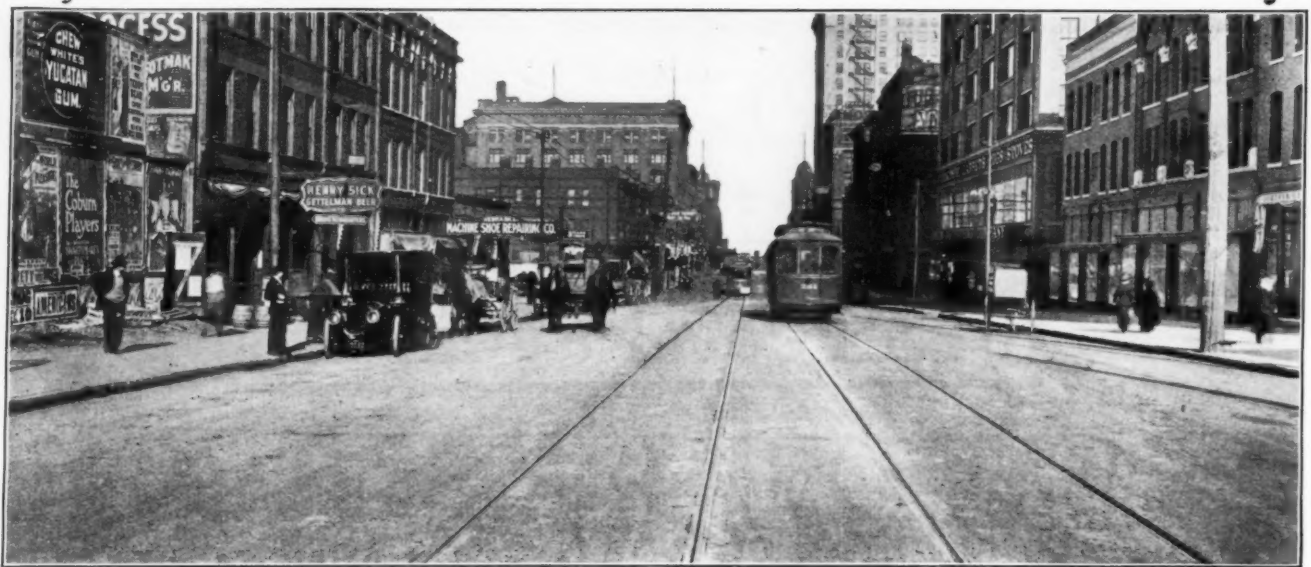
Its traction qualities for both the Horse and the Automobile are of the best.

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South 16th Street, Omaha, Nebr. Wood Block Pavement Filled with Barrett's Paving Pitch.

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Asphalt filler, which is viscid while being applied, becomes brittle and unelastic. Compression pulverizes it and when the joints widen it releases its grip on the brick and lies in loose, useless slices.

Cement is still more brittle and prohibits expansion or contraction, causing a host of serious difficulties.

Pitch is the only really satisfactory filler. Neither sand, asphalt nor cement compares with it. And the best pitch for this purpose is Barrett's Paving Pitch.

Booklet free on request.

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is made by final results. A high-grade engineering reputation is never built on low-grade work—even if the work was done in accordance with popular sentiment.

A lot of inferior paving has been done under engineers who knew all the time that it would probably result in failure and a much heavier expense than the first cost of the best pavement.

Taxpayers don't say: "Yes, that is a rotten pavement Engineer Blank laid, but then what can you expect; it didn't cost much." They forget that Mr. Blank only yielded to clamor for "economy" and perhaps to demands that all kinds of known-to-be inferior or experimental pavements should be given a trial.

Engineers who stand firmly for "the standard pavement of the world" constructed with

Trinidad Lake Asphalt

do not take any chance either with their own reputation or with the money of the taxpayers they represent.

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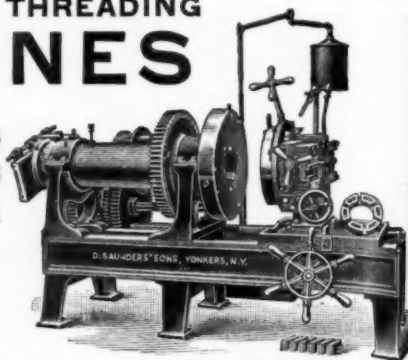
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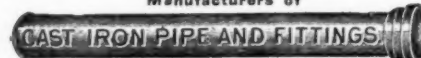
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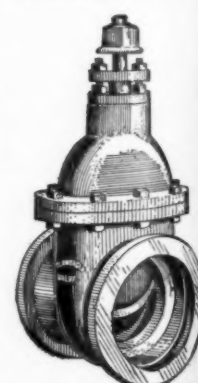
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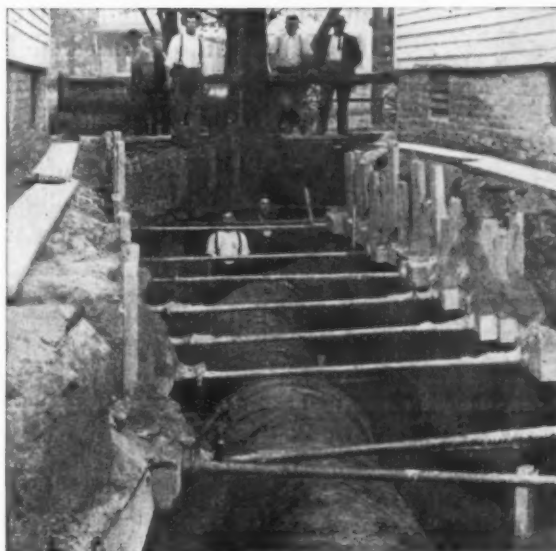
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Built of Canadian pine, wound spirally with insulated steel bands having a tensile strength up to 65,000 lbs. per sq. in. Absolutely proof against electrolysis. Cannot be destroyed by the extremes of temperature. Outlasts all metals. Over 1,000 miles in service.

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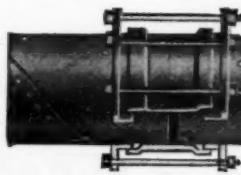
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Made from
3" to 42" inside
Diameter
Up to 1/4" Thick



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HAS UNUSUAL STRENGTH AND IS ESPECIALLY ADAPTED FOR

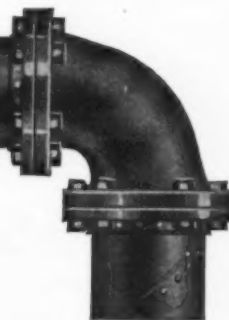
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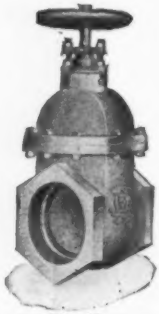


Fig. 87

in your office building, hotel, hospital, mill, factory, etc.? If so, use valves that have proved their reliability beyond doubt—the kind that is giving entire satisfaction everywhere in the country—

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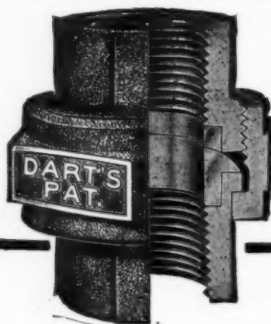
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Fig. 91



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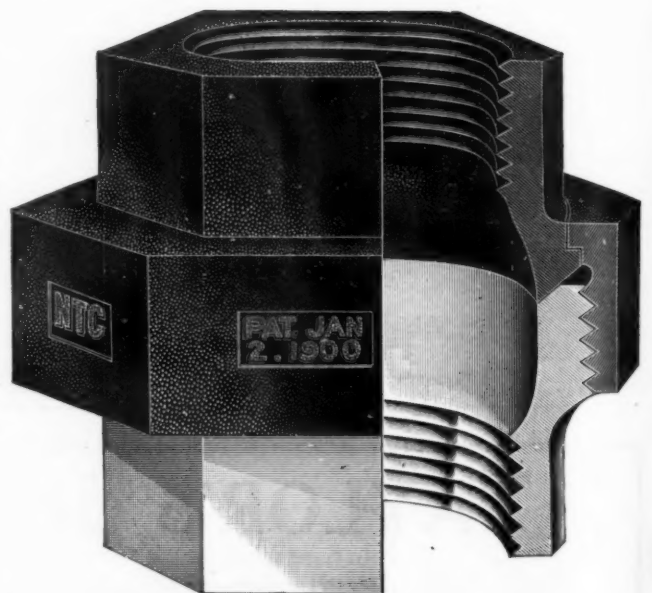
¶Sometimes an engineer will use "just any union" he happens to have handy where the service is not important; or sometimes he is compelled to use an inferior union when a better product is not available.

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The Capacity of this No. 36
Downie Double Stroke Deep
Well Pump is

30,000 Gallons Per Hour

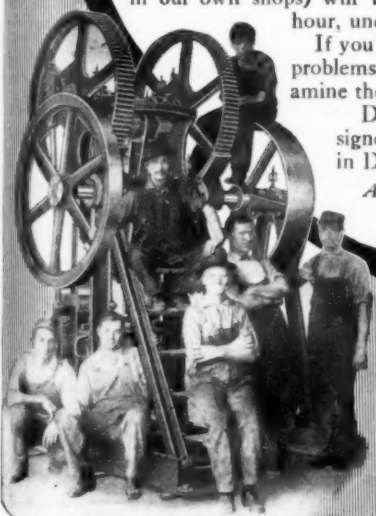
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If you have to do with pumping
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Downie Pumps are de-
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in Deep Wells.

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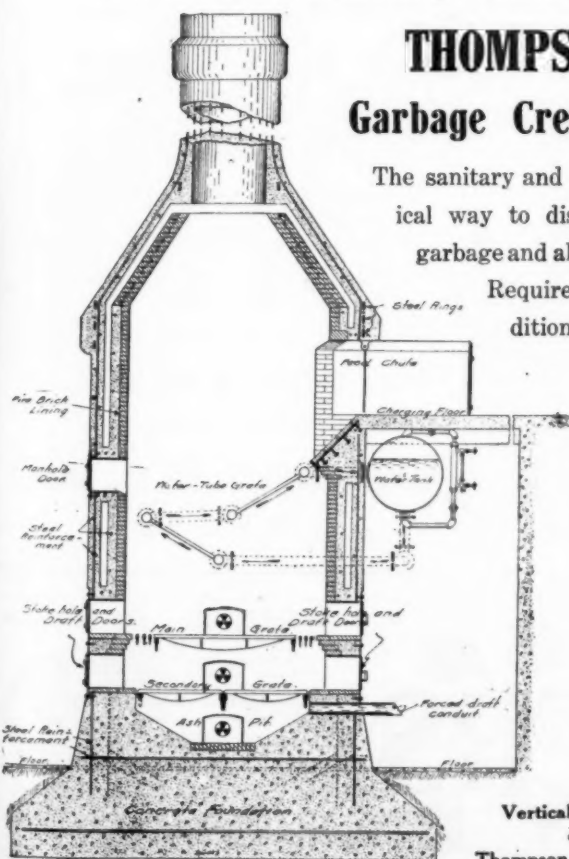
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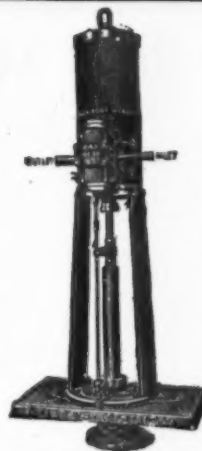
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Estimates furnished upon application.
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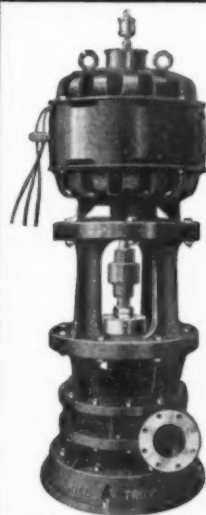
The accompanying illustration is a view of

The Hill-Tripp Vertical Thrust Turbine Combination Deep Well Pumping Unit

This Pump is just what the name suggests, a Combination
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Standard Lift Unit, and a high-grade Turbine or Centrifugal
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The water being forced from Nature's reservoir in the earth
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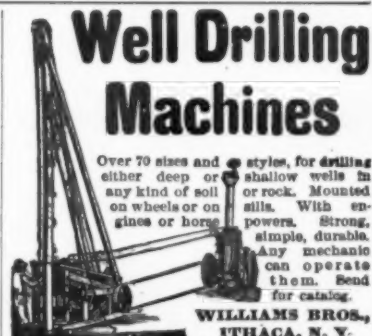
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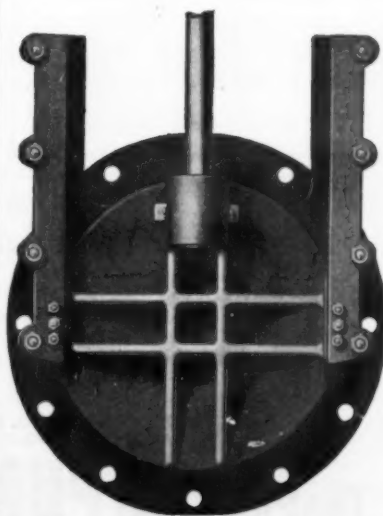
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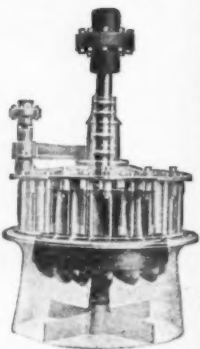
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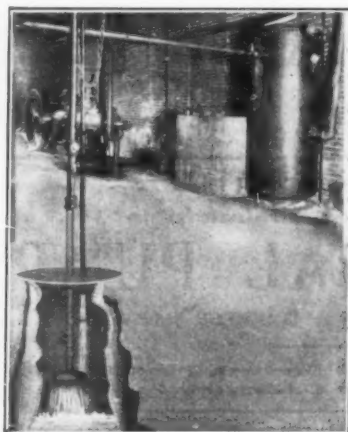


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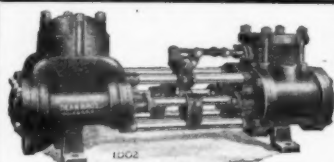
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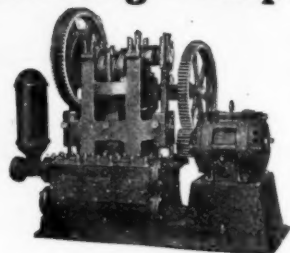
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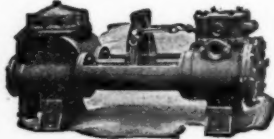
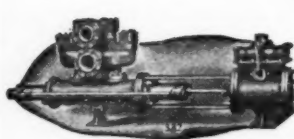
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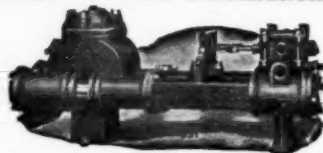
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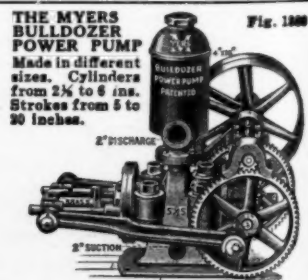


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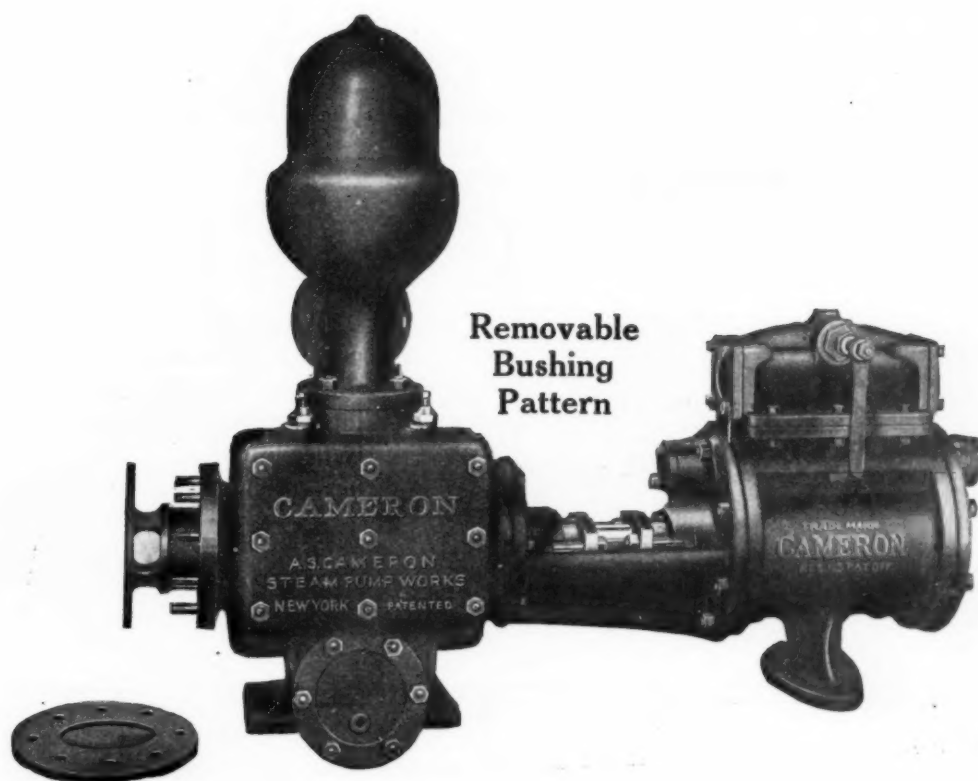
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POWER PUMP
Made in different
sizes. Cylinders
from 2 1/4 to 6 ins.
Strokes from 5 to
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Fig. 1200

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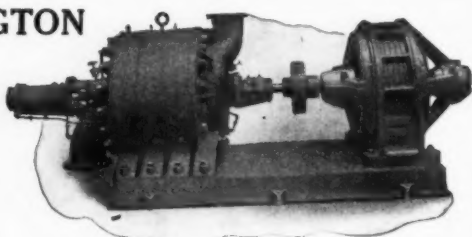
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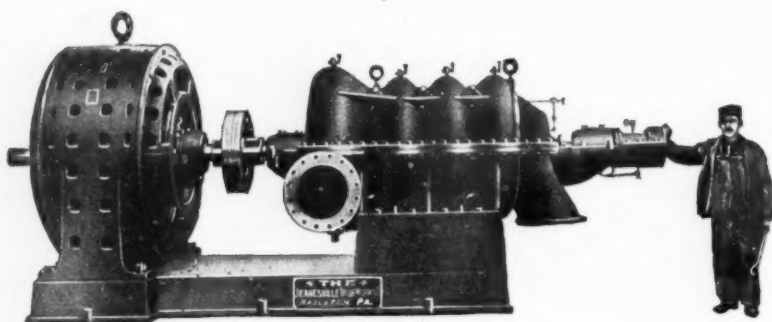
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Pump?

Then you need
a Vertical Pump
to set down in
the pit.

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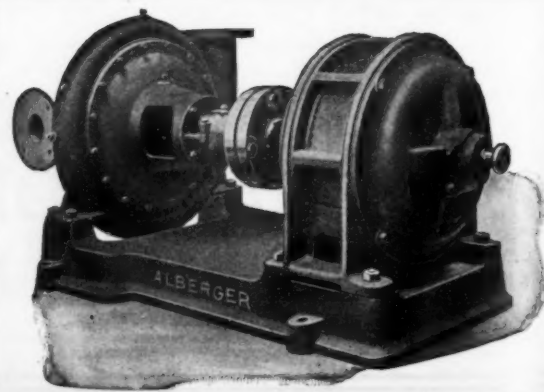
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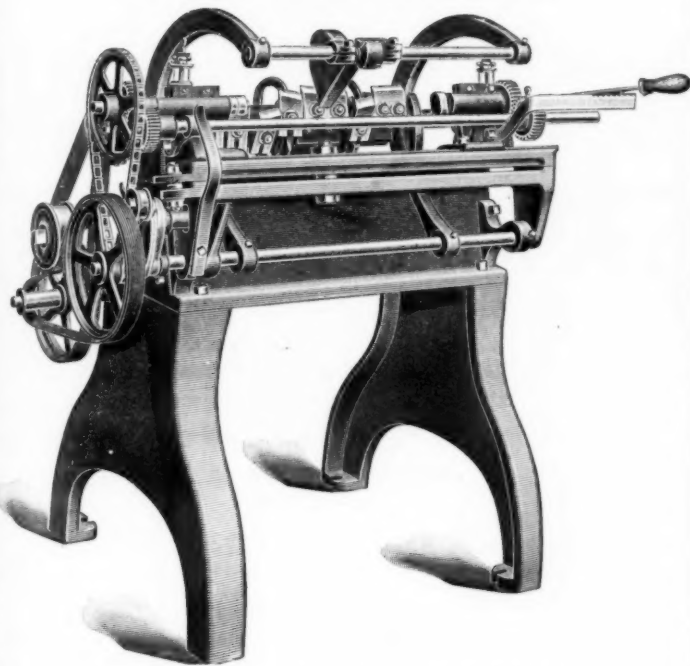


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Fig. 627.

Fig. 628.

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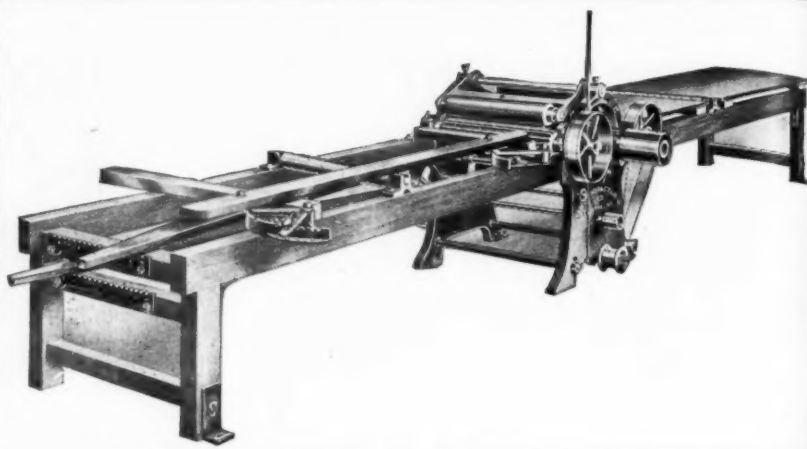
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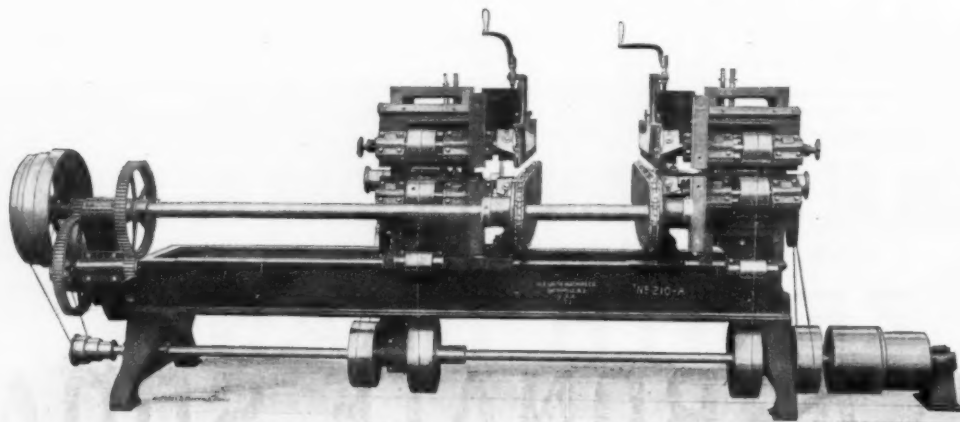
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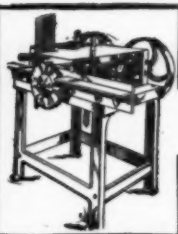


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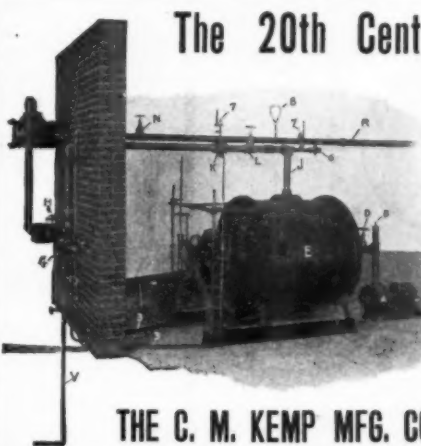
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groove meas-
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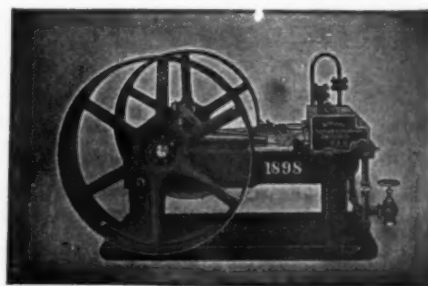
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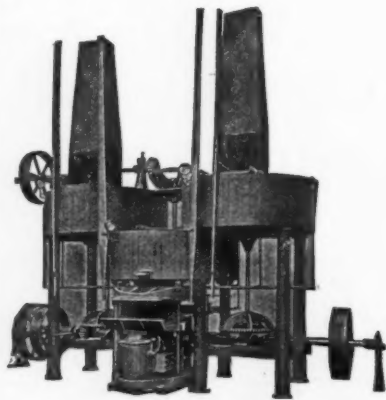
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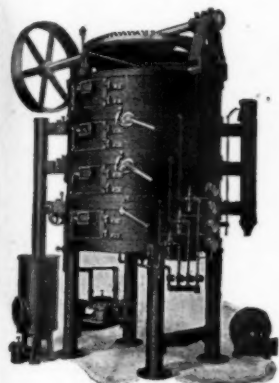
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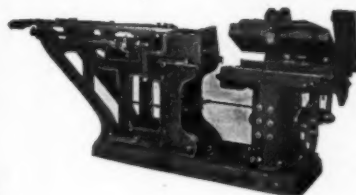
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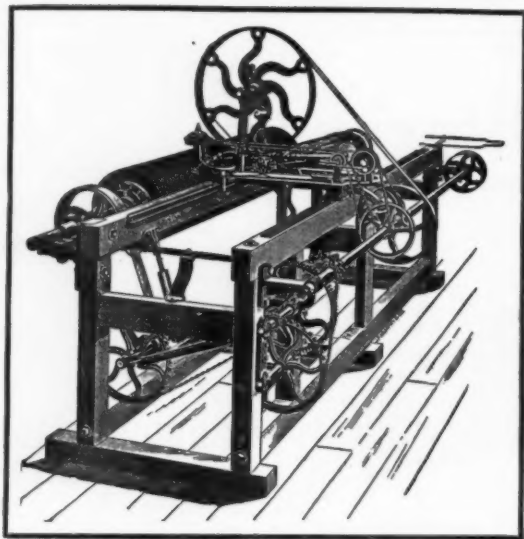
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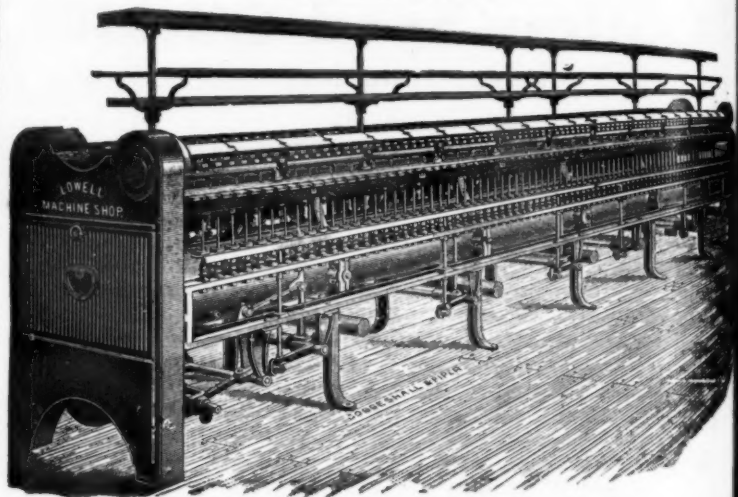
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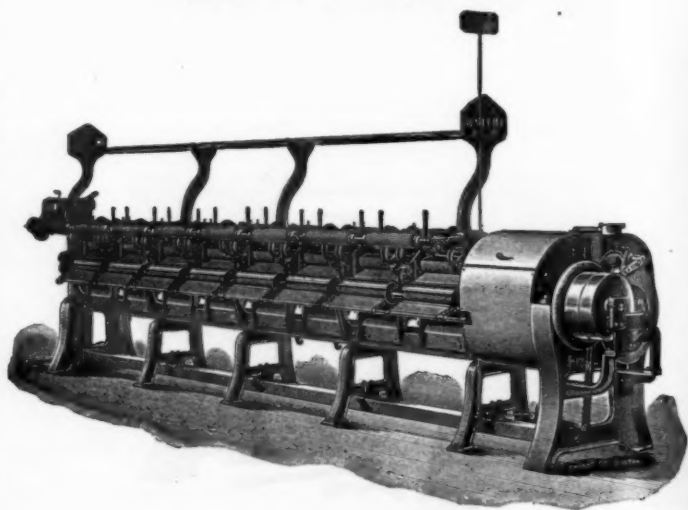
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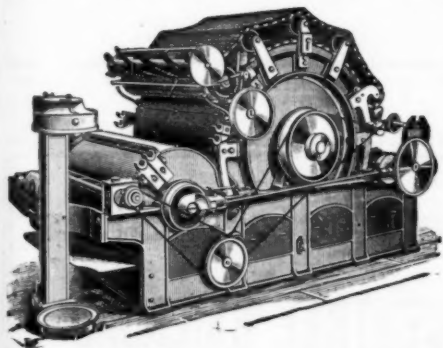
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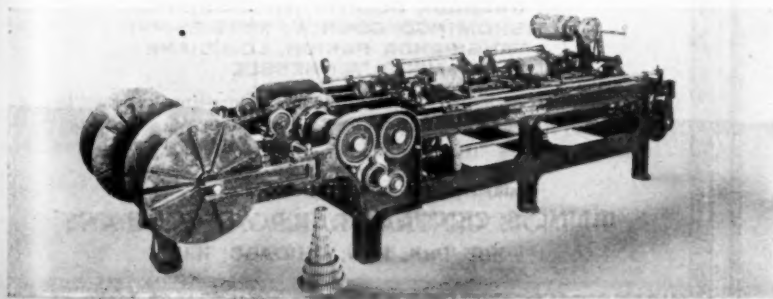
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Your Iron, Coal, Coke, Timber and other raw materials are procurable at the lowest cost and in any quantities you need, as you need them, from immense supplies under your hand on every side. Efficient labor is plentiful, and water power abundant and inexpensive.

The prosperous, loyal community round about supplies a home market of great possibilities. Excellent shipping facilities open the whole country for promotion of sales on a successful competitive basis.

The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

Address J. M. MALLORY

Savannah, Georgia

INDUSTRIAL AGENT

**CENTRAL OF GEORGIA
RAILWAY**

The Desirability

OF THE

SOUTH

AS THE BEST PLACE TO

Manufacture Cotton Goods

is illustrated in the increase of 67%
quoted by Census Department.

**WE CAN OFFER
Attractive Situations**

for those desiring to enter this field.

J. A. PRIDE

General Industrial Agent Seaboard Air Line Railway
NORFOLK, VIRGINIA

Rare Business Openings

Are everywhere apparent in the nine Southeastern States of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky, in the Southern Railway system's territory. Here are a few specific cases, any one of which is well worth your careful consideration.

Wood Working Plants Wanted

A North Carolina town, located in the heart of the hardwood district on Southern Railway lines, where good shipping facilities exist, desires to locate *furniture factories making chairs, sideboards, kitchen cabinets, etc.; also spoke, handle and rotary veneer mills.* The raw material advantages are unsurpassed, ample supply of intelligent native white labor, and a satisfactory scale of wages prevails. Labor troubles unknown. Local support will be extended to manufacturers availing themselves of this desirable location. Refer to file 40068.

Factory Buildings for Sale

A three-story brick building, 40x100 feet, with boiler and engine house attached, located in a beautiful North Carolina city, on railroad siding, is offered for sale without machinery. This plant is well adapted for a *furniture factory or small cotton or knitting mill.* Owner would either sell outright or become interested in starting a new business with a mutually interested party. Further particulars obtained by referring to file 4744.

Machine Shop and Foundry for Sale

Owing to ill-health of managing owner, a well-established machine shop and foundry in the State of Mississippi, on the Southern Railway and the M. & O. R. R., manufacturing *Cottonseed-oil Machinery and Supplies*, and doing general repair and foundry work, is offered for sale. One-half interest or all of this complete plant and business can be acquired as desired. The property consists of brick, corrugated iron and frame buildings; one 165x315 feet, another 85x165 feet, used for a foundry, all built four years ago. This is a *good paying business* and can be developed into even a greater industry. The complete plant can be purchased below its value. This is an opportunity worthy of investigation. Refer to file 40595.

Knit Goods, Wagon, Brick and Tile Plants Wanted

Experienced manufacturers desiring advantageous location for manufacturing *knit goods, wagons, brick and tile* will receive specific information on the most desirable location in North Carolina by referring to file 40946.

Full particulars regarding any of the above properties may be obtained by referring to the file numbers and writing

M. V. RICHARDS

Land and Industrial Agent, Room 52, Southern Ry.; M. & O. R. R.;
Ga. So. & Fla. Ry. and Va. & So. W. Ry.

WASHINGTON, D. C.

Excellent Shipping Facilities

Should Be A Powerful Inducement When Deciding Upon The Location For Your New Plant

There are many questions a manufacturer and jobber is called upon to answer when contemplating a change of location or the erection of a branch plant. Available raw material, condition of the labor market, proximity to trade centers, competition, climate, water, cost of power and a host of other like questions come up for serious consideration. But if the above questions are of importance, the one of SHIPPING FACILITIES is doubly so.

In this day and age, rapid transportation has, to a certain extent, annihilated distance. Where formerly it was highly necessary to have the factory located close to the consuming districts as well as in near proximity to the sources of raw material, this is not now quite so essential. In fact, it is often desirable, because of good shipping facilities, to have the factory located midway between these two points. When this is so, as in the case of the manufacturer who is after the foreign as well as the local trade, the question of shipping facilities becomes one of prime importance.

TEXAS CITY, TEXAS, is located on the MAINLAND of Galveston Bay, and affords a direct outlet to the sea for the tremendous traffic that originates in the middle western portion of the United States and Canada. It is the only practical deep-water harbor on the Mainland of Texas having a ship channel 27 feet deep. It has the most modern dock, warehouse and terminal system of any Southern port, and has established rail and water transportation lines that place it in direct communication with the sources of a variety of raw materials as well as with the principal trade centers of the world. Below are outlined its advantages in this respect.

LAND ROUTES

Texas City terminals are built along strictly modern lines, and are designed for the RAPID and ECONOMICAL HANDLING OF FREIGHT. To this end more than \$4,000,000 has been spent in the installation of modern fireproof warehouses, electrical freight-handling devices, electrical switching systems and other up-to-date terminal improvements, and in the purchase of a site for these facilities. Insurance rates, handling charges and miscellaneous expenses have been reduced to a minimum, which fact has resulted in a tremendous increase in the value of shipping via this port—28 per cent. during the last shipping season. A terminal belt line railway furnishes freight connections with all of the great railway systems reaching into this territory, among which are the following:

Galveston, Harrisburg & San Antonio; Missouri, Kansas & Texas; International & Great Northern—Gulf, Colorado & Santa Fe, and Trinity & Brazos Valley Railways.

WATER ROUTES

On the ocean side, Texas City has established steamship service between Texas City and New York; Texas City and Gulf Coast ports; Texas City and Tampico, Vera Cruz and Mexican Gulf Coast ports, and Texas City and Havre, Bremen and Liverpool. In addition, arrangements are now under way for establishing steamship service between Texas City and the principal ports of France, Italy and the Oriental countries. Thirty-six hundred feet of deep-water dock frontage represents the present berthing capacity of this modern port, and additions and extensions are being made as rapidly as conditions necessitate.

The above is a brief outline of shipping facilities at Texas City. This is one of the many inducements offered to manufacturers to locate here, and we believe you will agree that this is one of the very important things to be considered when determining upon a factory location.

**Our Industrial Department will be glad to co-operate with
interested parties, and will furnish detailed
information of any kind
upon request**

ADDRESS

Texas City Transportation Co., Texas City, Texas

Manufacturing Thrives in Florida

Manufacturing in Florida has long ago passed the experimental stage. So much so that during the ten years from 1900 to 1910 the manufacturing business in the State increased 112.7 per cent., while the gain for the entire country was 81.7 per cent.

The concerns engaged in manufacturing in Florida demonstrated the fact that it could be carried on at a profit, and this success attracted others.

One plant, engaged in the manufacture of boxes, crates, baskets and hampers, for packing and shipping fruits and vegetables, proved so profitable that its owners last year built another like it only a few hundred feet away. The same people own a saw mill, which is not by any means old, but the demand for their lumber is so great that they are on the point of tearing it down and replacing it with a mill of four times its capacity, and this will be done within a short time.

They would not have built the duplicate box and basket factory if they had not found manufacturing profitable.

They would not tear down a small mill to make way for a large one if they had not found lumber manufacturing profitable.

Other manufacturers throughout the State are enlarging their plants and increasing their output, because they find their business profitable, the demand for their products increasing.

And yet, with all the increase that has been made, the demand for products that should be manufactured in Florida is far in excess of the supply, and hundreds of thousands of dollars are sent out of the state for their purchase.

Florida, therefore, offers opportunities for profit in manufacturing that should appeal to enterprising men throughout the country who are not satisfied with their present locations.

These opportunities abound along the line of the Florida East Coast Railway in many places and in a variety of lines.

The Industrial Department of the road will cheerfully furnish information to those who write for it.

Florida East Coast Railway

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

Clinchfield's

Diversified Mineral Resources

A Basis for Many Profitable Industries

Throughout that section of Southwestern Virginia, Eastern Tennessee and Western North Carolina traversed by the Clinchfield there is a vast wealth of diversified mineral resources that would prove the basis for the operation of many profitable industries.

Some of these resources are being developed, but none of them in keeping with their quality and quantity.

Among the many important minerals of which there is an unlimited supply are

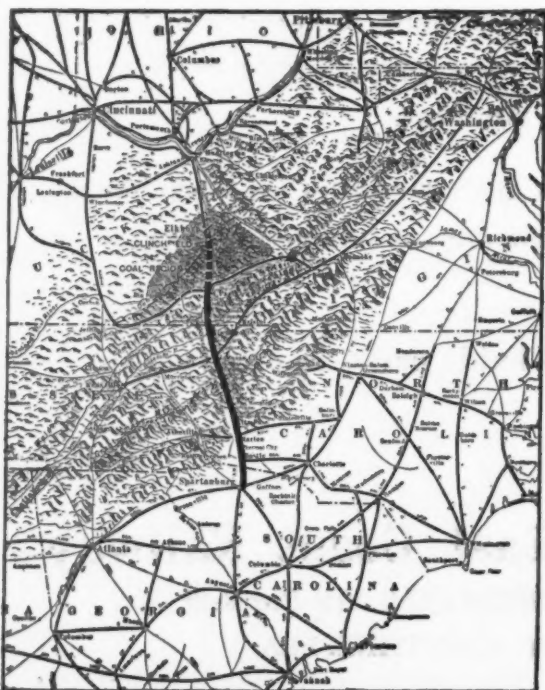
Kaolin	Mica	Feldspar	Marble	Clay
Quartz	Talc	Limestone	Barytes	Shales

Ready markets are accessible both for raw materials and the many products that can be made from them.

Here also can be found plenty of good white labor, an abundance of fine water, cheap power and a delightful invigorating climate.

These mineral-bearing lands can be purchased *now* at reasonable prices; consequently, it behooves the manufacturer or investor to investigate the situation immediately.

Careful investigations, extensive prospecting and detailed reports have been made upon the Clinchfield mineral resources by recognized authorities.



Full information as well as every co-operation will be given responsible parties desiring to study the opportunities available.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

J. J. Campion,
V.-P. and Traffic Manager

R. F. Brewer,
Industrial Agent

Johnson City, Tenn.

Cheap Industrial Power

Natural Gas from 4 to 10 cents per 1000 cu. ft.
In West Virginia

West Virginia by reason of its vast supply of natural gas offers to the manufacturer in every class power that is unsurpassed either in extent or cheapness, the cost for industrial purposes ranging from 4 to 10 cents per 1000 cubic feet.

To those who manufacture products from limestone, clay and glass sand, which abound in the State in large quantities and of unusual purity, more than ordinary opportunities are offered.

While those who are consumers of great quantities of power and who draw their raw materials from other sections will find it more economical to bring these raw materials to this source of cheap power.

As an illustration of this latter fact:

A large industry in the gas belt of West Virginia making a product from raw materials not existing in the State found it necessary to build another plant. Before doing so, however, every section of the country was studied to determine the best possible location. The result of this investigation was to erect the new plant within 8 miles of the old one.

It is not as if this natural gas were located in an out of the way place, for it exists in a section that is surrounded on all sides by great industrial activities and large consuming markets.

Moreover, the Baltimore & Ohio, which penetrates through the heart of the natural gas belt, provides, with its modern and thorough equipment, shipping facilities ample in every respect to meet all demands.

The Baltimore & Ohio Railroad, through its Industrial Department, will gladly furnish detailed information to those desiring to investigate the natural gas and other resources of West Virginia.

Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

6,125,000,000 feet of Timber

In 1910 this was the cut in Mississippi and Louisiana. The average price per thousand was \$14.50 in the form it went to market—this means \$88,800,000.

Little of this lumber was used in the condition in which it left the Mississippi and Louisiana mills.

It was put through various machines elsewhere, which turned it into siding, flooring, door and window frames and doors and windows, and the many other forms in which lumber is used by builders, or it went through other machines and came out spokes, hubs, axles, tongues or box boards, or through still others that turned it into furniture of the various kinds.

No matter which of these various kinds of machines it was put through, when it came out its value was considerably more than before, and in the case of furniture it increased so much that the first cost of the lumber was a very small proportion of the price of the article into which it was turned.

There is no good reason why furniture should not be manufactured in these States close to the forests in which the timber grows.

Those portions of the tree which are unavailable as lumber solve the power problem by furnishing all the fuel required by the boilers in generating the steam necessary to drive the machinery.

The labor supply in the two States under consideration is ample, and it is composed of people who are tractable, reliable, and free from the restlessness and dissatisfaction that prevail among the employes of so many industrial establishments elsewhere.

The lines of the Illinois Central Railroad and their connections furnish transportation facilities that reach directly into the country's greatest markets.

Besides this, Mississippi and Louisiana are a part of that section of the country in which for the next few years the greatest increase in population will be witnessed, thus furnishing an ever-increasing local market for furniture of all kinds.

The lands upon which these forests stand can now be purchased at prices so low that within a few years the land without the timber will be worth much more than is now asked for both land and timber, so that the timber will be more than clear profit to the man who buys now.

Here, then, meet all the conditions necessary to successful manufacturing enterprises—

Raw material that costs practically nothing, power generated by the use of waste from the mill, an ample supply of reliable labor, a local market with continually increasing purchasing power, transportation facilities that carry direct into all the population centers of the country.

What more can the manufacturer ask? What more can he find?

*Write our
Industrial
Department
For any
Information
Desired.*

Illinois Central Railroad
Chicago, Ill.

*J. C. Clair,
Industrial
and
Immigration
Commissioner
Chicago, Ill.*

Solid Foundation of Great Falls, S. C.

An Unequalled Power Opportunity for Manufacturers

At Great Falls, South Carolina, in the Valley of the Catawba, the rushing waters of a big river have been harnessed to meet the demands of the steady industrial expansion sweeping over the South.

From the beginning of time the vast power resources lying in the onward flow of the Catawba to the sea have been running to waste.

But the Southern Power Company, with a full knowledge of their value, brought the Catawba under control by the construction of concrete dams, and linked the harnessed power to its mighty chain of hydro-electric plants, which have proven such a potent factor in the industrial development of the Piedmont section of North and South Carolina.

Great Falls combines all the needed advantages for profitable manufacture found in other thriving communities in this favored region—

Proximity to Raw Materials

Abundance of Cheap Power

Unsurpassed Climate

Cheap Sites for Factories

Good Transportation Facilities

On one hand the cotton field of the lowlands, on the other the mineral and timber resources of the highlands supply the basis for manufacturing pursuits of a wide range.

While immediately at Great Falls are deposits of granite and clays, the latter especially suited for making fireproof tile, drain tile, sewer pipe and other readily marketed products.

The Southern Power Company is prepared to furnish power upon reasonable terms and to any extent required. Their transmission lines traverse an area 335 x 125 miles. They already supply the power for 176 cotton mills, besides street railways, lighting plants and most of the manufacturing industries in the various cities in this district. Their facilities are unequalled and completely solve the power problem.

Great Falls is on the Seaboard Air Line, which traverses six Southern States and has connections leading to the best markets in the land.

Through its Industrial Department it will gladly point out the opportunities available and furnish facts and figures pertaining to specific openings.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

- Abrasive Materials.**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Hill Grindstone Co., Constitution, Ohio.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
Interstate Audit Co., Washington, D. C.
Neville, Chas., Savannah, Ga.
- Adding Machines.**
Adder Machine Co., Wilkes-Barre, Pa.
Burrage Adding Machine Co., Detroit, Mich.
- Agents. (Manufacturers')**
Allen, Herbert F. L., Washington, D. C.
- Agricultural Implements.**
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**
Allen, Herbert F. L., Washington, D. C.
American Air Compressor Wks., New York, N. Y.
American Compressor & Pump Co., Baltimore, Md.
Blaisdell Machinery Co., Bradford, Pa.
Chicago Pneumatic Tool Co., Chicago, Ill.
Gardner Governor Co., Quincy, Ill.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
Nagle Corless Engine Wks., Erie, Pa.
Quincy Engine Co., Quincy, Pa.
Union Steam Pump Co., Battle Creek, Mich.
- Air Motors.**
Ingersoll-Rand Co., New York, N. Y.
- Aluminum Products. (Bars, Sheets, Tubes.)**
Aluminum Company of America, Pittsburgh, Pa.
- Aluminum Wheels.**
Norton Company, Worcester, Mass.
- Annealing Boxes.**
Wilfong Iron Works Co., Millard F., Phila., Pa.
- Anti-Friction Metals.**
Bailey-Lebby Co., Charleston, S. C.
Gilbert & Sons Brass Fd'g. Co., A., St. Louis, Mo.
Phosphor-Bronze Smelting Co., Phila., Pa.
Virginia Railway Supply Co., Norfolk, Va.
- Anti-Rail Creepers.**
Q. & C. Co., New York, N. Y.
- Architects.**
Cain, Shepherd & Peale, Richmond, Va.
Lockwood, Greene & Co., Boston, Mass.
Milburn, Helster & Co., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Pettit, Jr., Chas., Godfrey, Danville, Va.
Sirtins, J. E., Greenville, S. C.
Sorey, Norman W., Norfolk, Va.
- Architects' Supplies.**
Starrett, L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron and Sheet Metal Work.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
- Art Glass.**
Blinswanger & Co., Memphis, Tenn.
- Art Glass and Prisms. (Set in Zinc and Copper.)**
Spleas Art Glass Co., G. A., St. Louis, Mo.
- Asbestos.**
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
- Asphalt.**
Armstrong Mfg. Co., Richmond, Va.
Barber Asphalt Paving Co., Philadelphia, Pa.
Guilf Refining Co., Pittsburgh, Pa.
Texas Co., The, New York, N. Y.
- Asphalt Melters.**
Steubner Iron Wks., G. L., Long Island City, N. Y.
- Automobiles. (Motor Trucks.)**
International Motor Co., New York, N. Y.
Schacht Motor Car Co., Cincinnati, Ohio.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbitt Metal. [See Anti-Friction Metal.]**
- Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)**
American Railway Supply Co., New York, N. Y.
- Bakers' Machinery.**
Lynn Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**
Baltimore Trust Co., Baltimore, Md.
Barr, J. H. G., Philadelphia, Pa.
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Glenn, W. S., Spartanburg, S. C.
Halsey & Co., N. W., New York, N. Y.
Lisman & Co., F. J., New York, N. Y.
Mercantile Trust & Deposit Co., Baltimore, Md.
New First National Bank, Columbus, O.
Nuveen & Co., John, Chicago, Ill.
Savannah Bank & Trust Co., Savannah, Ga.
Sheber & Co., H. F., Philadelphia, Pa.
Skinner, Clifford R., Philadelphia, Pa.
Southern States Develop't Co., New York, N. Y.
- Banks.**
Fifth-Third National Bank, Cincinnati, Ohio.
First National Bank, Baltimore, Md.
First Nat'l Bank of Key West, Key West, Fla.
Merchants National Bank, Baltimore, Md.
New First National Bank, Columbus, O.
National Exchange Bank, Baltimore, Md.
Savannah Bank & Trust Co., Savannah, Ga.
- Bank and Office Railings and Grilles. (Iron.)**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chattanooga Iron & Wire Wks., Chat'n'g, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire and Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Bank Fixtures.**
Rose & Thompson, Baltimore, Md.
- Bar Iron. (Refined and Galvanized.)**
Carnegie Steel Co., Pittsburgh, Pa.
- Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)**
American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Concrete-Steel Co., The, New York, N. Y.
Franklin Steel Co., Franklin, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
- Bearings. (Ball.)**
Standard Roller Bearing Co., Philadelphia, Pa.
- Bearings. (Brass Journal.)**
Gilbert & Sons Brass Fd'g. Co., A., St. Louis, Mo.
- Bearings. (Locomotive and Car.)**
Keystone Bronze Co., Pittsburgh, Pa.
- Bearings. (Oilless.)**
North American Metal Co. (Metaline Co.), Long Island City, N. Y.
- Bearings. (Roller.)**
Standard Roller Bearing Co., Philadelphia, Pa.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
Western Electric Co., New York, N. Y.
- Belting. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Lebby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barker Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Diamond Rubber Co., Akron, O.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward R., Glen Cove, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Norwich Belting Co., Norwich, Conn.
Williams & Sons, L. B., Dover, N. H.
- Belting. (Chain.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Morse Chain Co., Ithaca, N. Y.
- Belt Conveyors.**
Jeffrey Mfg. Co., Columbus, O.
Robins Conveying Belt Co., New York, N. Y.
Taplin-Rice-Clerkin Co., Akron, O.
- Belt Dressing.**
Diamond Rubber Co., Akron, O.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward R., Glen Cove, N. Y.
- Belt Fasteners.**
Crescent Belt Fastener Co., New York, N. Y.
- Belt Lacing and Supplies. [See Belting, Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Blackboards. (Slate.)**
East Bangor Con. Slate Co., The, East Bangor, Pa.
Hovner, J. K., Slaton, Pa.
Johnson, E. J., New York, N. Y.
- Block Tackle. (For Wire or Manila Rope.)**
Patterson Co., W. W., Pittsburgh, Pa.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Mattawan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Atlanta, Ga.
Sturtevant Co., B. F., Hyde Park, Mass.
- Blueprints.**
Dixie Blueprint Co., Atlanta, Ga.
- Boilers.**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Babcock & Wilcox Co., New York, N. Y.
Cameron & Barker Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chat'n'g, Tenn.
Chicago House Wrecking Co., Chicago, Ill.
Cole Mfg. Co., B. D., Newnan, Ga.
Cooper Co., C. & G., Mt. Vernon, O.
Gem City Boiler Co., Dayton, O.
Gibbs Machinery Co., Columbia, S. C.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works, Sharon, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Ruemml-Dawley Mfg. Co., St. Louis, Mo.
Schofield & Sons Co., J. S., Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Southern Engine & Boiler Works, Jackson, Tenn.
Union Iron Works Co., Selma, Ala.
Valk & Murdoch Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Garland Nut & Rivet Co., Pittsburgh, Pa.
Milton Mfg. Co., Milton, Pa.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co., Baltimore, Md.
- Boring. (Cylinder.)**
Richmond Machine Wks., Inc., Richmond, Va.
Strickland Machine Co., Richmond, Va.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Box Shooks.**
Naylor & Co., S. E., Gulfport, Miss.
- Brass Goods.**
Bailey-Lebby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Kennedy Valve Mfg. Co., Elmira, N. Y.
McKenna Bros. Brass Co., Pittsburgh, Pa.
Powell Co., Wm., Cincinnati, O.
Pratt & Cady Co., Hartford, Conn.
- Brazings. (Cast Iron.)**
Richmond Machine Works, Inc., Richmond, Va.
Strickland Machine Co., Richmond, Va.
- Brass Railings and Grilles, etc.**
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Building.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Fliske & Co., Inc., New York, N. Y.
Hood Brick Co., B. Midlin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kittanning Clay Products Co., Bradford, Pa.
Oconee Brick & Tile Co., Milledgeville, Ga.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Sibley-Menge Brick & Coal Co., Birmingham, Ala.
Scott Brick Co., Alex. A., Knoxville, Tenn.
- Brick. (Blast Furnace, Coke Oven.)**
Hood Brick Co., B. Midlin, Atlanta, Ga.
- Brick. (Enamelled.)**
Amer. Enam. Brick & Tile Co., New York, N. Y.
- Brick. (Fire Clay.)**
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Fliske & Co., Inc., New York, N. Y.
Kilian Fire Brick Works, Killan, S. C.
Louisville Fire Brick Works, Highland Park, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens' Sons Co., H., Macon, Ga.
Taylor Sons Co., Chas., Cincinnati, O.
Union Mining Co., Mt. Savage, Md.
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**
Carnell, George, Philadelphia, Pa.
Furnace Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallion, O.
Scott-Madden Iron Works, Keokuk, Ia.
Steele & Sons, J. C., Statesville, N. C.
Taplin-Rice-Clerkin Co., Akron, O.
- Brick Fireplaces. [See Fireplaces, Artistic Brick.]**
- Brickwork. (Artistic.)**
Fliske & Co., Inc., New York, N. Y.
- Bridges. (Concrete.)**
Roanoke Bridge Co., Inc., Roanoke, Va.
- Bridges. (Rolling Lift.)**
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges.**
American Bridge Co. of New York, New York.
Belmont Iron Works, Philadelphia, Pa.
Champion Bridge Co., Williston, Ohio.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Farris Bridge Co., Pittsburgh, Pa.
Memphis Bridge Co., Memphis, Tenn.
Roanoke Bridge Co., Inc., Roanoke, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.
- Bridge and Structural Iron Paints.**
Chattanooga Paint Co., Chattanooga, Tenn.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., New York, N. Y.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Buckets. (Excavators.)**
Biehl Iron Works, Reading, Pa.
Hayward Co., New York, N. Y.
Moughan Mch. Co., Chicago, Ill.
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Ore, etc.)**
Biehl Iron Works, Reading, Pa.
Brown Holsting Mch. Co., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Smith Co., T. L., Atlanta, Ga.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Falls City Construction Co., Louisville, Ky.
Farris Bridge Co., Pittsburgh, Pa.
Ferro Concrete Construction Co., Cincinnati, O.
Selden-Breck Construction Co., St. Louis, Mo.
White & Co., J. G., New York, N. Y.
- Buildings. (Financed and Erected.)**
Falls City Construction Co., Louisville, Ky.
Gulf Coast Construction Co., Houston, Tex.
- Building Supplies.**
Armstrong Mfg. Co., Richmond, Va.
Chicago House Wrecking Co., Chicago, Ill.
Norfolk Building Supplies Corp., Norfolk, Va.
Southern Building Material Co., Norfolk, Va.
Streeter Clip & Specialty Co., Inc., Chicago, Ill.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**
North American Metal Co. (Metaline Co.), Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebeling's Sons Co., John A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.
- Cableways. (Overhead Suspension.)**
Broderick & Bascom Rope Co., St. Louis, Mo.
Flory Mfg. Co., S., Bangor, Pa.
International Cable Railway Co., Baltimore, Md.
Lidgerwood Mfg. Co., New York, N. Y.
Mead-Morrison Mfg. Co., Cambridge, Mass.
Roebeling's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Cans.**
New Orleans Rfg. & Metal Wks., New Orleans, La.
Southern Can Co., Baltimore, Md.
- Canning Machinery and Supplies.**
Robins & Co., A. K., Baltimore, Md.
Sprague Canning Machinery Co., Chicago, Ill.
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Carborundum Co., Niagara Falls, N. Y.
- Card Clothing.**
American Supply Co., Providence, R. I.
- Cars. (Dump, Industrial, Logging and Misc.)**
Austin Mfg. Co., Chicago, Ill.
Baldwin Equipment & Supply Co., Chicago, Ill.
Chase Fd'g. & Mfg. Co., Columbus, Ohio.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., West New Brighton, N. Y.
Males Co., Cincinnati, O.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Raleigh Iron Works Co., Raleigh, N. C.
Smith Co., T. L., Atlanta, Ga.
Steubner Iron Wks., G. L., Long Island City, N. Y.
Union Iron Works, Selma, Ala.
Western Wheeled Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Couplers and Knuckles.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Lighting and Heating.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Tusculooza Iron Works, Tusculooza, Ala.
Union Iron Works, Selma, Ala.
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
King Mfg. Co., Birmingham, Ala.
- Castings. (Brass and Bronze.)**
Gilbert & Sons Brass Fd'g. Co., A., St. Louis, Mo.
Keystone Bronze Co., Pittsburgh, Pa.
King Mfg. Co., Birmingham, Ala.
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Stratton & Bragg Co., Petersburg, Va.
Triumph Electric Co., Cincinnati, O.
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Caroline Foundry Co., Baltimore, Md.
Columbian Iron Works, Chattanooga, Tenn.
Georgia Car & Locomotive Co., Atlanta, Ga.
Higman Pipe & Foundry Co., Lynchburg, Va.
Wane Pipe Works, Lynchburg, Va.
Poole Engineering & Machine Co., Baltimore, Md.
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Stratton & Bragg Co., Petersburg, Va.
Tusculooza Iron Works, Tusculooza, Ala.
U. S. Cast Iron Pipe & Fd'g. Co., New York, N. Y.
Valk & Murdoch Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Reliance Steel Casting Co., Pittsburgh, Pa.
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Chattanooga Rfg. & Fd'g. Co., Chattanooga, Tenn.
Haworth Manufacturing Co., Cincinnati, O.
Harry Steel Co., O. K., St. Louis, Mo.
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Hartman Cement Co., Inc., Wm. G., Philadelphia, Pa.
Ironton Portland Cement Co., Ironton, O.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Kosmos Portland Cement Co., Inc., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Baltimore, Md.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
Tidewater Portland Cement Co., Baltimore, Md.
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Power & Mining Machinery Co., Cudahy, Wis.
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Ford Chain Block & Mfg. Co., Philadelphia, Pa.
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Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.

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Bartlett & Snow Co., C. O., Cleveland, O.
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Concrete Ties.

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Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Buffalo, N. Y.
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Monaghan Mch. Co., Chicago, Ill.
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Pittet Co., Inc., H. W., Philadelphia, Pa.
Pier & Contractors' Supply Co., New York, N. Y.
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Wheeler Iron Works, G. L., Long Island City, N. Y.

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Coring Towers.

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Russmell-Dawley Mfg. Co., St. Louis, Mo.

Cordage.

American Mfg. Co., New York, N. Y.
Benderick & Ransom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
International Cotton Mills Corp., New York, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.

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Peter Gerlack Co., Cleveland, O.

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Ameling Prospecting Co., H. R., St. Louis, Mo.

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Harr Co., B. F., Baltimore, Md.
Walt Co., Chambersburg, Pa.

Cotton Duck.

International Cotton Mills Corp., New York, N. Y.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

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Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Columbia, S. C.

Cotton-Mill Machinery.

American Mach. & Mfg. Co., Charlotte, N. C.
American Supply Co., Providence, R. I.
Draper Co., Hopedale, Mass.
French Oil Mill Machinery Co., Piqua, Ohio.
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Lowell Machine Shop, Lowell, Mass.
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Saco-Petties Co., Newton Upper Falls, Mass.
Whitlin Machine Works, Whitinsville, Mass.
Whitinsville Spinning Ring Co., Whitinsville, Mass.

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American Supply Co., Providence, R. I.
Whitinsville Spinning Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

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French Oil Mill Machinery Co., Piqua, Ohio.
Murray Co., The, Atlanta, Ga.
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Couplings.

American Spiral Pipe Works, Chicago, Ill.
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Caldwell Co., Inc., W. E., Louisville, Ky.
Golden's Foundry & Machine Co., Columbus, Ga.
Pratt & Cady Co., Hartford, Conn.
Wood's Sons, T. B., Chambersburg, Pa.

Couplings. (Car.)

Weimer Chain & Iron Co., Lebanon, Pa.

Couplings. (Hose, Air, Gas, Steam and Water.)

National Tube Co., Pittsburgh, Pa.

Coverings. (Pipe, Boiler, etc.)

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Southern Pipe Covering Co., Inc., Richmond, Va.

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Pullman Auto. Ventilator Mfg. Co., York, Pa.

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American Hoist & Derrick Co., St. Paul, Minn.
Brown Hoisting Machinery Co., Cleveland, O.
Ester Machine Works, Pittston, Pa.
Ohio Locomotive Crane Co., Bucyrus, O.

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Hayward Co., New York, N. Y.
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Northern Engineering Works, Detroit, Mich.
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Crayons.

Georgia Talc Co., Asheville, N. C.

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Specialty Eng. Co., Houston, Tex.

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Crescoted Wood Block Pav. Co., New Orleans, La.

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Internat'l Crescoting & Cons. Co., Galveston, Tex.
National Lumber & Cresc. Co., Texarkana, Ark.
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Southern Crescoting Co., Ltd., Slidell, La.
Western Electric Co., New York, N. Y.

Crossings. [See Railroad Frogs and Switches.]**Crosstie Machine.**

Standard Cross Tie Mch. Co., New Orleans, La.

Crossties. (Crescoted.)

American Crescote Works, New Orleans, La.
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- Promoters.**
 Electric Bond & Share Co., New York, N. Y.
- Protector Steel.** (Concrete Curb, Steps, etc.)
 Steel Protected Concrete Co., Philadelphia, Pa.
- Pulleys.** (Friction Clutch.)
 Brown Co., A. & F., New York, N. Y.
 Caldwell & Son Co., Inc., W. E., Louisville, Ky.
 Caldwell & Son Co., H. W., Chicago, Ill.
 Lane Mfg. Co., Montpelier, Vt.
 Saginaw Mfg. Co., Saginaw, Mich.
 Salem Foundry & Machine Works, Salem, Va.
- Pulleys, Shafting and Hangers.**
 Caldwell & Son Co., Inc., W. E., Louisville, Ky.
 Caldwell & Son Co., H. W., Chicago, Ill.
 Cresson Co., Geo. V., Philadelphia, Pa.
 Golden's Foundry & Machine Co., Columbus, Ga.
 Jeffrey Mfg. Co., Columbus, O.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Link-Belt Co., Nictown (Philadelphia), Pa.
 Nordyke & Marmon Co., Indianapolis, Ind.
 Poole Engineering & Machine Co., Baltimore, Md.
 Standard Roller Bearing Co., Philadelphia, Pa.
 Wood's Sons Co., T. B., Chambersburg, Pa.
- Pumps.** (Air Lift.)
 Harris Air Pump Co., Indianapolis, Ind.
- Pumps.** (Boiler Feed.)
 Alberger Pump Co., New York, N. Y.
 Cameron Steam Pump Wks., A. S., New York, N. Y.
 Dean Bros. Steam Pump Wks., Indianapolis, Ind.
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Jeanesville Iron Works Co., Hazleton, Pa.
 McGowan Co., John H., Cincinnati, O.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Murray Iron Works Co., Burlington, Ia.
 Myers & Bros., F. E., Ashland, O.
 Union Steam Pump Co., Battle Creek, Mich.
- Pumps.** (Centrifugal.)
 Alberger Pump Co., New York, N. Y.
 Buffalo Steam Pump Co., Buffalo, N. Y.
 De Laval Steam Turbine Co., Trenton, N. J.
 Erie Pump & Engine Works, Erie, Pa.
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Haydon Pump Co., Quincy, Ill.
 Jeanesville Iron Works Co., Hazleton, Pa.
 Morris Machine Works, Baldwinville, N. Y.
 Noro Engine Co., Lansing, Mich.
 Wood & Co., R. D., Philadelphia, Pa.
 Worthington, H. R., Harrison, N. J.
- Pumps.** (Deep Well.)
 Hill-Tripp Pump Co., Anderson, Ind.
 Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
 McGowan Co., John H., Cincinnati, O.
- Pumps.** (Hydraulic.)
 Buffalo Steam Pump Co., Buffalo, N. Y.
 Cardwell Machine Co., Richmond, Va.
 Dean Bros. Steam Pump Wks., Indianapolis, Ind.
 Erie Pump & Engine Works, Erie, Pa.
 Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Lift and Force.)
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Odorous and Excavating.)
 Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Pneumatic.)
 Harris Air Pump Co., Indianapolis, Ind.
 Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Rotary.)
 Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Steam.)
 Blake & Knowles Steam Pump Works, East Cambridge, Mass.
 Blakelee Mfg. Co., Du Quoin, Ill.
 Buffalo Steam Pump Co., Buffalo, N. Y.
 Cameron Steam Pump Wks., A. S., New York, N. Y.
 Cameron & Barkley Co., Charleston, S. C.
 Cook Well Co., The, St. Louis, Mo.
 Dean Bros. Steam Pump Wks., Indianapolis, Ind.
 Deane Steam Pump Co., Burlington, Mass.
 Gardner Governor Co., Quincy, Ill.
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
 McGowan Co., John H., Cincinnati, O.
 Murray Iron Works Co., Burlington, Ia.
 Price Machinery Co., S. M., Norfolk, Va.
 Sydnor Pump & Well Co., Richmond, Va.
 Union Steam Pump Co., Battle Creek, Mich.
 Worthington, H. R., Harrison, N. J.
- Pumps.** (Trench.)
 Bond Co., Harold L., Boston, Mass.
 C. H. & E. Mfg. Co., Milwaukee, Wis.
 Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Vacuum.)
 Alberger Pump Co., New York, N. Y.
 Dean Bros. Steam Pump Wks., Indianapolis, Ind.
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Smith Co., T. L., Atlanta, Ga.
 Union Steam Pump Co., Battle Creek, Mich.
- Pumps.** (Water-works.)
 McGowan Co., John H., Cincinnati, O.
- Pumping Machinery.**
 Allis-Chalmers Co., Milwaukee, Wis.
 Blakelee Mfg. Co., Du Quoin, Ill.
 Bond Co., Harold L., Boston, Mass.
 Cameron Steam Pump Wks., A. S., New York, N. Y.
 Cook Well Co., The, St. Louis, Mo.
 Dean Bros. Steam Pump Wks., Indianapolis, Ind.
 Deane Steam Pump Co., Holyoke, Mass.
 Deming Co., Salem, O.
 Erie Pump & Engine Works, Erie, Pa.
 Fairbanks, Morse & Co., Chicago, Ill.
 Goulds Mfg. Co., Seneca Falls, N. Y.
 Harris Air Pump Co., Indianapolis, Ind.
 Hill-Tripp Pump Co., Anderson, Ind.
 Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
- McGowan Co., John H., Cincinnati, O.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Morris Machine Works, Baldwinville, N. Y.
 Myers & Bros., F. E., Ashland, O.
 Norbom Engineering Co., Philadelphia, Pa.
 Sydnor Pump & Well Co., Richmond, Va.
 Union Steam Pump Co., Battle Creek, Mich.
 Wood & Co., R. D., Philadelphia, Pa.
 Worthington, H. R., Harrison, N. J.
- Punching and Shearing Machinery.**
 Bertsch & Co., Cambridge City, Ind.
 Bliss Co., E. W., Brooklyn, N. Y.
 Long & Allatrista Co., Hamilton, O.
 Roversford Foundry & Mach. Co., Roversford, Pa.
- Pyrites Burners.**
 Caroline Foundry Co., Baltimore, Md.
 Kratt Engineering & Mach. Co., Atlanta, Ga.
- Quarrying and Stonecutting Machinery.**
 Ingersoll-Rand Co., New York, N. Y.
- Railings, Grilles, etc. (Brass.)**
 McKenna Bros. Brass Co., Pittsburgh, Pa.
- Railroads.** (Agricultural and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]
- Railroad Equipment and Supplies.** (New and Second-hand.)
 American Frog & Switch Co., Hamilton, O.
 American Locomotive Co., New York, N. Y.
 American Valve & Meter Co., Cincinnati, O.
 Bailey-Libby Co., The, Charleston, S. C.
 Baldwin Equipment & Supply Co., Chicago, Ill.
 Benjamin Equip. Co., Harry, St. Louis, Mo.
 Birmingham Rail & Loco. Co., Birmingham, Ala.
 Boston Iron & Metal Co., Baltimore, Md.
 Cincinnati Frog & Switch Co., Cincinnati, O.
 Foster Co., L. B., Pittsburgh, Pa.
 Georgia Car & Locomotive Co., Atlanta, Ga.
 Hoffman & Co., R. C., Baltimore, Md.
 Hyman-Michaels Co., Chicago, Ill.
 Indiana Steel & Iron Co., Pittsburgh, Pa.
 Kirby Frog & Switch Co., Birmingham, Ala.
 Macleary, J. H., Suffolk, Va.
 Males Co., Cincinnati, O.
 Manning, Maxwell & Moore, Inc., New York, N. Y.
 Maryland Equipment & Supply Co., Baltimore, Md.
 Mathes Iron & Metal Co., G. St. Louis, Mo.
 May & Turner Co., Atlanta, Ga.
 National Iron & Steel Co., Houston, Tex.
 Newhall Eng. Co., Geo. M., Philadelphia, Pa.
 Papin Co., R. K., St. Louis, Mo.
 Pickett Co., Inc., H. W., Philadelphia, Pa.
 Q & C Co., New York, N. Y.
 Read Co., Howard W., Philadelphia, Pa.
 Robinson & Orr, Pittsburgh, Pa.
 Sherwood, E. C., New York, N. Y.
 Smith-Courtney Co., Richmond, Va.
 Southern Iron & Equipment Co., Atlanta, Ga.
 Southern Supply Co., Norfolk, Va.
 Steel Rail Supply Co., The, New York, N. Y.
 United States Rail Co., Cumberland, Md.
 Vulcan Iron Works, Wilkes-Barre, Pa.
 Weir Frog Co., Cincinnati, O.
 West Virginia Rail Co., The, Huntington, W. Va.
 Wilson & Co., E. H., Philadelphia, Pa.
 Zelnicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**
 American Frog & Switch Co., Hamilton, O.
 Cincinnati Frog & Switch Co., Cincinnati, O.
 Kirby Frog & Switch Co., Birmingham, Ala.
 Mathes Iron & Metal Co., G. St. Louis, Mo.
 May & Turner Co., Atlanta, Ga.
 Robinson & Orr, Pittsburgh, Pa.
 Sweet's Steel Co., Williamsport, Pa.
 Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)
 Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)
 Carnegie Steel Co., Pittsburgh, Pa.
 Foster Co., L. B., Pittsburgh, Pa.
 Franks, J. E., Atlanta, Ga.
 Hoffman & Co., R. C., Baltimore, Md.
 Hyde Bros. & Co., Pittsburgh, Pa.
 Hyman-Michaels Co., Chicago, Ill.
 Indiana Steel & Iron Co., Pittsburgh, Pa.
 Levis & Co., Henry, Philadelphia, Pa.
 Macleary, J. H., Suffolk, Va.
 Mathes Iron & Metal Co., G. St. Louis, Mo.
 May & Turner Co., Atlanta, Ga.
 National Iron & Steel Co., Houston, Tex.
 Newhall Eng. Co., Geo. M., Philadelphia, Pa.
 Ohio Iron & Metal Co., Chicago, Ill.
 Papin Co., R. K., St. Louis, Mo.
 Republic Iron & Steel Co., Youngstown, O.
 Robinson & Orr, Pittsburgh, Pa.
 Sherwood, E. C., New York, N. Y.
 Southern Iron & Equipment Co., Atlanta, Ga.
 Steel Rail Supply Co., The, New York, N. Y.
 Sweet's Steel Co., Williamsport, Pa.
 Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
 United States Rail Co., Cumberland, Md.
 West Virginia Rail Co., The, Huntington, W. Va.
 Wilson & Co., E. H., Philadelphia, Pa.
 Zelnicker Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R. R. Frogs and Switches.]
- Rail Joints.**
 Q & C Co., New York, N. Y.
- Railways.** (Industrial.)
 Chase & Fdry. & Mfg. Co., Columbus, O.
 Hunt Co., C. W., West New Brighton, N. Y.
 Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**
 Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reinforcing Bars.**
 Carnegie Steel Co., Pittsburgh, Pa.
 Concrete-Steel Co., New York, N. Y.
 Concrete Steel Engineering Co., New York, N. Y.
 Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)
 Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)
 Chicago Pneumatic Tool Co., Chicago, Ill.
 Independent Pneumatic Tool Co., Chicago, Ill.
 Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**
 Austin-Western Co., Ltd., The, Chicago, Ill.
 Buffalo Steam Roller Co., Buffalo, N. Y.
 Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
 Cressy, Walter, Gloucester, Mass.
 Galion Iron Works Co., Galion, O.
 Iroquois Iron Works, Buffalo, N. Y.
 Kelly Springfield Road Roller Co., Springfield, O.
 Syracuse Chilled Plow Co., Syracuse, N. Y.
 Universal Road Mch. Co., Kingston, N. Y.
 Western Wheeled Scraper Co., Aurora, Ill.
- Roadmaking Materials.**
 Standard Oil Co., Inc., Louisville, Ky.
 Standard Oil Co., Inc., Newark, N. J.
 Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)
 Austin-Western Co., Ltd., The, Chicago, Ill.
 Buffalo Steam Roller Co., Buffalo, N. Y.
 Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
 Iroquois Iron Works, Buffalo, N. Y.
 Kelly Springfield Road Roller Co., Springfield, O.
 Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**
 Gulf Refining Co., Pittsburgh, Pa.
 Standard Oil Co., Inc., Louisville, Ky.
 Standard Oil Co., Inc., Newark, N. J.
 Texas Co., The, New York, N. Y.
- Road Plows.**
 Case Threshing Mch. Co., Inc., J. I., Racine, Wis.
 Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservatives.**
 Gulf Refining Co., Pittsburgh, Pa.
 Standard Oil Co., Inc., Louisville, Ky.
 Standard Oil Co., Inc., Newark, N. J.
 Texas Co., The, New York, N. Y.
- Road Sprayers.** (Oil, Tar, Asphalt.)
 Cressy, Walter, Gloucester, Mass.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)
 Veach & Co., L. R., Louisville, Ky.
- Rolls.** (Bending and Straightening.)
 Bertsch & Co., Cambridge City, Ind.
- Roofers' and Tinner's Supplies.**
 Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)
 Dinlaco & Bro., A., Pittsburgh, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)
 Allen, Herbert F. L., Washington, D. C.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Armitage Mfg. Co., Richmond, Va.
 Asphalt Ready Roofing Co., New York, N. Y.
 Barber Asphalt Paving Co., Philadelphia, Pa.
 Barrett Mfg. Co., Philadelphia, Pa.
 Cameron & Barkley Co., Charleston, S. C.
 Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
 Johns-Manville Co., H. W., New York, N. Y.
 National Roofing Co., Tonawanda, N. Y.
 Standard Paint Co., New York, N. Y.
- Roofing.** (Metal Shingles.) [See Shingles, Metal.]
 Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
 Cortright Metal Roofing Co., Philadelphia, Pa.
 Edwards Mfg. Co., The, Cincinnati, O.
 Milwaukee Corrugating Co., Milwaukee, Wis.
 Moesch-Edwards Corrugating Co., Covington, Ky.
- Roofing.** (Slate.)
 East Bangor Consol. Slate Co., East Bangor, Pa.
 Gault & Bangor Slate Co., Easton, Pa.
 Hower, J. K., Slaton, Pa.
 Johnson, E. J., New York, N. Y.
- Roofing Tile.**
 National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Metal.)
 American Rolling Mill Co., Middletown, O.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Cameron & Barkley Co., Charleston, S. C.
 Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
 Cortright Metal Roofing Co., Philadelphia, Pa.
 Edwards Mfg. Co., The, Cincinnati, O.
 Hyndman Roofing Co., Cincinnati, O.
 Milwaukee Corrugating Co., Milwaukee, Wis.
 Moesch-Edwards Corrugating Co., Covington, Ky.
 New Orleans Rfg. & Metal Wks., New Orleans, La.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**
 American Mfg. Co., New York, N. Y.
 Broderick & Eastern Rope Co., St. Louis, Mo.
 Columbian Rope Co., Auburn, N. Y.
 International Cotton Mills Corp., New York, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.
- Rope.** (Transmission and Hoisting.)
 American Mfg. Co., New York, N. Y.
 American Steel & Wire Co., Chicago, Ill.
 Broderick & Eastern Rope Co., St. Louis, Mo.
 Caldwell & Son, Inc., W. E., Louisville, Ky.
 Columbian Rope Co., Auburn, N. Y.
 Hunt Co., C. W., West New Brighton, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.
 Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**
 Brown Co., A. & F., New York, N. Y.
 Caldwell & Son, Inc., W. E., Louisville, Ky.
 Cresson Co., Geo. V., Philadelphia, Pa.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Hunt Co., C. W., West New Brighton, N. Y.
 Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**
 Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**
 Eureka Fire Hose Mfg. Co., New York, N. Y.
 New Jersey Car Sp'g & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)
 Lufkin Rule Co., Saginaw, Mich.
 Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**
 York Safe & Lock Co., York, Pa.
- Safety Appliances.** (For Elevator.)
 Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**
 Arundel Sand & Gravel Co., Baltimore, Md.
 Carter, L. A., New Orleans, La.
 Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
 Lathrop & Co., C. P., Richmond, Va.
- Sand Rammers.**
 Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**
 Church & Dwight Co., New York, N. Y.
- Sash Chain.**
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**
 Gerlach Co., Peter, Cleveland, O.
 Hutter Bros. Saw Mfg. Co., Rochester, N. Y.
 Smith Machine Co., B., Smithville, N. J.
 Sydnor Pump & Well Co., Richmond, Va.
- Saws.** (Band.)
 Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)
 Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**
 Knight Manufacturing Co., Canton, Ohio.
 Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**
 Gainesville Iron Works, Gainesville, Ga.
 Gibbs Machinery Co., Columbia, S. C.
 Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**
 Bailey-Libby Co., Charleston, S. C.
 Cameron & Barkley Co., Charleston, S. C.
 Chase Turbine Mfg. Co., Orange, Mass.
 Knight Manufacturing Co., Canton, Ohio.
 Lane Mfg. Co., Montpelier, Vt.
 Mecklenburg Iron Works, Charlotte, N. C.
 Price Mch. Co., S. M., Norfolk, Va.
 Schofield's Sons Co., J. S., Macon, Ga.
 Southern Engine & Boiler Works, Jackson, Tenn.
 Sydnor Pump & Well Co., Richmond, Va.
 Union Iron Works Co., Selma, Ala.
- Saw Rigs.** (Portable.)
 C. H. & E. Mfg. Co., Milwaukee, Wis.
- Saw Sharpeners.**
 Abrasive Material Co., Philadelphia, Pa.
 Carborundum Co., Niagara Falls, N. Y.
 Norton Co., Worcester, Mass.
 Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gln.)
 Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**
 Howe Scale Co., New York, N. Y.
 Rome Scale & Mfg. Co., Rome, Ga.
 Standard Scale & Supply Co., Pittsburgh, Pa.
- Scrap Iron and Metals.**
 Kauder & Co., H., Bowling Green, Ohio.
- Screening Apparatus.**
 Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)
 Cincinnati Mfg. Co., Cincinnati, O.
 New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)
 Cresson Co., Geo. V., Philadelphia, Pa.
 Cross Engineering Co., Carbondale, Pa.
 Erdle Perforating Co., Rochester, N. Y.
 Hendrick Mfg. Co., Carbondale, Pa.
 J. J. Mfg. Co., Columbus, O.
 Mundi & Sons, Charles, Jersey City, N. J.
 McLanahan Stone Mach. Co., Hollidaysburg, Pa.
 New Jersey Wire Cloth Co., Trenton, N. J.
 Taplin-Rice-Clerkin Co., Akron, O.
- Searchlights.**
 Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)
 Buffalo Forge Co., Buffalo, N. Y.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Sewer Pipe Machinery.**
 Taplin-Rice-Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)
 Bibb Sewer Pipe Co., Macon, Ga.
 Cannelton Sewer Pipe Co., Cannelton, Ind.
 Pittsburgh-Buffalo Co., Pittsburgh, Pa.
 Pomona Terra-Cotta Co., Pomona, N. C.
 Stevens Sons Co., H., Macon, Ga.
- Shafting.** (Polished Steel.)
 Field & Co., Inc., Philadelphia, Pa.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Republic Iron & Steel Co., Youngstown, O.
- Shafting.** (See Pulleys, Shafting and Hangers.)
- Shapers.**
 Steptoe Shaper Co., John, Cincinnati, O.
- Sharpening Stones.**
 Norton Co., Worcester, Mass.
 Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)
 Bertsch & Co., Cambridge City, Ind.
 Roversford Fdry. & Mach. Co., Roversford, Pa.
 Stoll Co., D. H., Buffalo, N. Y.
- Sheet Brass and Copper.**
 Hussey & Co., C. G., Pittsburgh, Pa.
 Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**
 Bertsch & Co., Cambridge City, Ind.
 Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**
 American Rolling Mill Co., Middletown, O.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Cincinnati Sheet & Steel Co., Cincinnati, O.
 Le Belle Iron Works, Steubenville, O.
 Republic Iron & Steel Co., Youngstown, O.
 Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
 Wood Iron & Steel Co., Alton, Philadelphia, Pa.
 Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Metal.)
 Burries & Co., John T., Anderson, S. C.
 Chattanooga Rfg. & Fdy. Co., Chattanooga, Tenn.
 Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
 Cortright Metal Roofing Co., Philadelphia, Pa.
 Edwards Mfg. Co., Cincinnati, O.
 Hyndman Roofing Co., Cincinnati, O.
 Milwaukee Corrugating Co., Milwaukee, Wis.
 Moesch-Edwards Corrugating Co., Covington, Ky.
- Shredders.** (Bark, Chip, etc.)
 Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)
 Bolles Iron & Wire Works, J. E., Detroit, Mich.
 Chesapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)
 Kinneer Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)
 Victor Mfg. Co., Newburyport, Mass.
- Signs.** (Metal Lithographed.)
 Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Advt.)
 Indestructible Sign Co., Columbus, O.
- Skylights and Cornices.**
 Milwaukee Corrugating Co., Milwaukee, Wis.
 New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)
 East Bangor Consol. Slate Co., East Bangor, Pa.
 Gault & Bangor Slate Co., Easton, Pa.
 Hower, J. K., Slaton, Pa.
- Sluice Gates and Appliances.**
 Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)
 Chattanooga Boiler & Tank Co., Chat'n'g, Tenn.
 Keeler Co., E., Williamsport, Pa.
 Lombard Iron Works, Augusta, Ga.
 Petroleum Iron Works Co., Sharon, Pa.
 Ruemmel-Dawley Mfg. Co., St. Louis, Mo.
 Schofield's Sons Co., J. S., Macon, Ga.
 Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)
 Weber Chimney Co., Chicago, Ill.

- Spikes. (Railroad.)**
Hudson & Co., R. O., Baltimore, Md.
West Virginia Rail Co., The, Huntington, W. Va.
- Spikes. [See Nails and Spikes.]**
- Sprayers. (Oil, Tar, Asphalt.)**
Cressy, Walter, Gloucester, Mass.
- Springs. (Machinery, Railway, Spiral.)**
American Steel & Wire Co., Chicago, Ill.
Gay Spring Works, New York, N. Y.
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinklers. (Automatic.)**
General Fire Extinguisher Co., Providence, R. I.
- Sprinkler Systems. (Automatic.)**
General Fire Extinguisher Co., Providence, R. I.
- Stamp Mills.**
McKeeburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**
Baltimore Office Supply Co., Baltimore, Md.
Bennett Rubber Stamp & Seal Co., Atlanta, Ga.
- Standpipes.**
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Des Moines Bridge & Iron Co., Pittsburgh, Pa.
Bartley Boiler Works, Montgomery, Ala.
Ester Co., E., Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Rennell Dawley Mfg. Co., St. Louis, Mo.
- Stapling Machinery. (Fruit Package Basket, etc.)**
Harsco Machine Co., St. Joseph, Mich.
- Stationers. (Envelopes, Letter and Bills Heads, etc.)**
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**
Rule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**
Bumbers' Sons, D., Yonkers, N. Y.
- Steam Heating.**
Keeler Co., E., Williamsport, Pa.
Peck-Hammond Co., The, Cincinnati, O.
- Steamship Lines.**
Baltimore Steam Packet Co., Baltimore, Md.
Comapeake Steamship Co., Baltimore, Md.
Merchant & Miners' Trans. Co., Baltimore, Md.
- Steam Separators.**
Hoppes Mfg. Co., Springfield, O.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
- Steam Shovel Chains.**
Standard Chain Co., Pittsburgh, Pa.
Werner Chain & Iron Co., Lebanon, Pa.
- Steam Shovels. [See Excavating Machinery.]**
- Steam Specialties.**
Isenody Valve Mfg. Co., Elmira, N. Y.
Fuell Co., Wm., Cincinnati, O.
- Steam Traps.**
Jenkins Bros., New York, N. Y.
Lindstrom's Mach. Wks., John T., Allentown, Pa.
Pratt & Cady Co., Hartford, Conn.
- Steel.**
American Rolling Mill Co., Middletown, O.
Dietrich Bros., Baltimore, Md.
Field & Co., Inc., Philadelphia, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Steel. (Tool.)**
Field & Co., Inc., Philadelphia, Pa.
Jessops & Sons, Inc., Wm., St. Louis, Mo.
- Steel. (Vanadium.)**
Carnegie Steel Co., Pittsburgh, Pa.
- Steel Buildings. (Designers, Builders.)**
Amer. Bridge Co. of New York, New York, N. Y.
Champion Bridge Co., Wilmington, Ohio.
Comapeake Iron Works, Baltimore, Md.
Furns Bridge Co., Pittsburgh, Pa.
Phoenix Iron Co., Philadelphia, Pa.
Republie Iron & Steel Co., Youngstown, O.
Richmond Engr. & Mfg. Co., Richmond, Va.
Rennell-Dawley Mfg. Co., St. Louis, Mo.
- Steel Casting.**
Acme Steel & Malleable Iron Wks., Buffalo, N. Y.
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Belmont Steel Casting Co., Pittsburgh, Pa.
- Steel Plate Work.**
Case-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chat'n'ga, Tenn.
Hoffman & Co., R. C., Baltimore, Md.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
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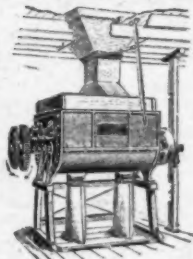


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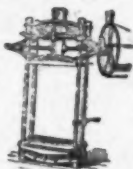
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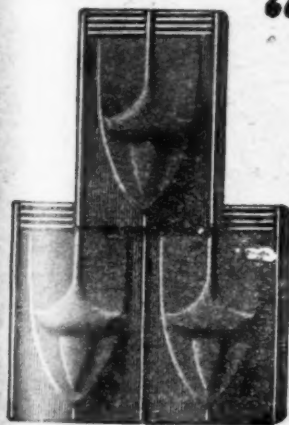
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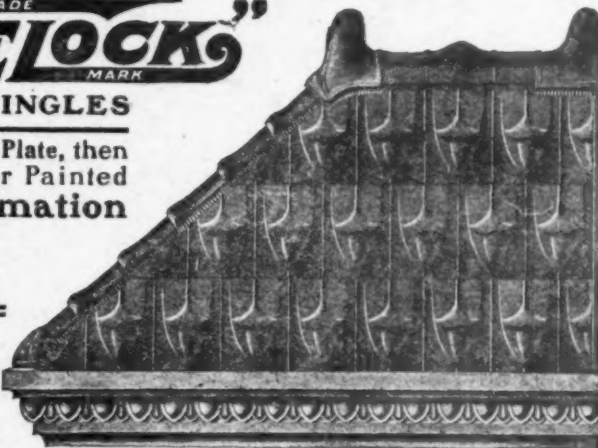
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